St. George and the (Methane) Dragon

A climate-fiction novel

by Lord Hugh

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Cp. 1. The Island

Nisos Agios Nikolaos (St. Nicholas Island) is a small Greek island in the Northern Ionian "inland sea". Enclosing it are the bigger islands of Levkas, Kefalonia, and Ithaca, and the Greek mainland lies to the East.

Agios Nikolaos is more a state of mind than a place you can actually find on a map. There is only one village on it and a small harbor. The 2011 census recorded 325 inhabitants in the village. The Greek Waters Pilot, the sailor's bible for the area, introduces it as having "cool green pine glades running down to the sea."

It says: "the islanders make a living from fishing and a little agriculture and, one suspects, remittances from abroad. Sadly, the village is dying as the young move away to more lucrative jobs on the mainland and the population is skewed to the elderly."

The pilot guide also refers to *George* by name. He is mentioned as the owner of a taverna at the root of the breakwater and helpfully gives his phone number. It says that he is the unofficial, self-appointment harbormaster.

Sure enough, when I rounded the rocky outcrop topped by a ruined windmill to enter the harbor, George came charging out to meet me in a white speedboat like an avenging angel.

"Captain! Captain!" he shouted, "how long you stay?"

"One night," I replied.

"I give you best spot. Tonight you will sleep like a baby. Come with me."

Then he roared off to tie up alongside an open berth next to a long line of yachts moored stern-to on the quay with anchors out into the harbor.

I drifted around inside the breakwater, hurriedly put fenders over the side, got stern lines ready for the shore, un-dogged the anchor and tested its remote control. By that stage a crosswind was rising and the whole docking procedure was starting to look a bit "iffy". And to cap it all, a long line of sailing vessels was starting to form outside the mole, anxious to get in before the wind got any stronger or the petite little harbor ran out of space for the night.

Anchoring astern in a small space with a crosswind can be nerve wracking enough even with a competent crew, and I was sailing solo.

"Drop your anchor behind the fishing boat and reverse here," George shouted from the quay.

But there was not enough room from the spur of the dock where the fishing boat was moored to allow me to lay enough anchor chain and come up to the quay astern with any margin of safety. And the windage on my catamaran meant that the gusts swung me round, which put the yacht alongside at risk. Seeing a potentially ugly scene unfold, the crew of that boat had already come on deck with fenders nervously in hand. And a small coterie of tourists, with no thought in their mind to lend a helping hand, was beginning to form itself into an audience on the dock (phones in hand, no doubt itching for YouTube gold!).

Finally seeing that this wasn't going to work, George said, "Captain! Captain! Never mind! Come side-to along here!"
I was relieved to go side-on to the quay, but felt a little guilty that I was taking up so much space when the harbor was crammed so full and boats were still jockeying to get in. But my guilt evaporated when George severely tested the holding-power of my mooring lines by rafting first a German monohull alongside me, and then a Swedish ketch on the outside of that. I suspect he probably would have carried on stacking boats alongside me until my warps snapped, except that any more would have blocked the harbor mouth and made it un-navigable.
By nightfall George had packed every last boat in like sardines and the whole place was a mess of charter boat flotillas rafted in lines of a dozen or more right across the harbor. George had rigged his speedboat with fenders so he could use it as tugboat. He gave the impression of Little Toot as he fussed around the boats, nudging and shouting until every last one was safely wedged in.
I wondered what the local fisherman thought of losing their harbor space to all the tourist traffic. I can't imagine they were very impressed. George must have kept a roster in his head of who intended to go out fishing that night, because he blocked some fishing boats in and left others with small leads to thread their way out between the visiting yachts that hemmed them in like pack ice. Later I found out that George paid the local fisherman off with a stipend, ostensibly to compensate them for the inconvenience. It was more likely as an excuse so that they could save face taking charity from George when he helped them out financially as the local fish stocks were declining due to commercial overfishing.
None of the boats in the harbor were properly secured and if the wind had got up in the night I suspect there would have been enough carnage to bankrupt a brace of marine insurance companies. Yet the wind was very consistent at this time of year, usually dying at night, and so everything was fine. Perhaps George had paid off the Maistro too (the afternoon breeze that starts up like clockwork in the Ionian during the Summer afternoons). The wind dropped like magic in the evening. All was tranquil overnight and through the next morning; and yes, I did sleep like a baby.
At night the village lit up and came alive rather delightfully – especially George's taverna.
I saw he greeted everyone the same way he greeted me after taking my lines: "Welcome! Welcome to Agios Nikolaos! My name is George. I am the owner of the taverna in the corner. If you like you can come and enjoy a drink this evening and maybe stay for something to eat. We have the best seafood in the Ionian!"
When he gave this same spiel to a French boat that came in directly after me the woman on the deck joked, "Ah, I recognize you. You are George Cloony, non?"
"No, he is my ugly brother," quipped George.
Anyone within earshot was amused, because if George resembled anyone famous it was probably more a Hellenic-looking version of Ricky Gervais than a George Cloony. Although he was Ricky Gervais from the neck up, from the neck down he was a bit pear-shaped and his legs were disproportionately short. So he was not exactly Sexiest-Man-of-the-Year-Twice-Running material by any means. Far from it.
Although there was no water or electricity to be had on the quay, mooring was free. Because of George's bravura performance packing us all in safely, like everyone else,

I felt obliged to eat in his taverna that evening. Which was, of course, his whole plan. And it didn't exactly hurt George's bottom line that all the commercial charter boat skippers and flotilla captains knew they could all dine free at George's so long as they brought their paying guests along with them.
When I got to George's place that evening it was already so full that I found the German crew, who were rafted up alongside my catamaran, waiting outside for seating.
"Could you please direct me to George's Taverna?" I said to them facetiously, because there was a huge floodlit marquee outside that said "George Taverna", two billboards with "George" in large letters, every tablecloth had "George" written on it and, I'm not kidding, every chair had "George" stenciled loudly on the back.
"I think it's here," the humorless German skipper said, rather shocked and deadpan, his bald dome probably almost exploding with incredulity at the thought I could possibly be so dumb.
I was surprised to find all the tables seemed to be reserved and they hustled me into an obscure corner without much view, which was disappointing. The tables were arranged on a balcony and along part of the harbor jetty, and then spilled over onto the pebble beach on one side. The best tables were right at the water's edge, with water almost lapping at the diners' feet. There was a beautiful view over the strait, right up to the low-lying adjacent islands and off to the purple hills of the distant mainland, just then losing the last light of the sun.
My first day on the island was an auspicious day. It was Friday the 13th and soon a Harvest Moon was about to rise from over the mainland, paving the still waters with shimmering silver which seemed tailor-made to melt lovers' hearts.
If I was alone I probably would have put up with the table I had been given, but before I could order, a couple I knew on the sailing circuit around the Ionian, Dean and Anna, turned up unexpectedly. Dean was an American and his wife, Anna, was from Barcelona. They owned handsome sloop named *Pizzazz*. I knew Dean well through contact with him in a previous association at work in America. I called them over and invited them to sit down and share a carafe of chilled white wine with me. I asked the waitress if we could move to a better table but she said that they were all fully booked.
"No matter then," I said. "Perhaps we'll come back later for dinner when things quiet down. In the meantime we'll go for a drink at one of the other tavernas."
That was enough to galvanize her like a cattle-prod and she took off saying, "No, no. Wait! I'll see what I can do."
In a moment George himself appeared and he started barking at the staff. Soon things were rearranged; tables were split, and we where given the best table in the house.
"Anything rather than losing us to the competition!" said Dean.

Gazing across the harbor I felt sorry for the other tavernas. In his role as unofficial harbormaster George had obviously just about cornered the whole tourist market. He had the best location by far, and the biggest place, and while the competition made a very picturesque scene along the waterfront, they only ever seemed to have a smattering of sorry looking customers at any one time. On the other hand, George

Taverna packed them in by the hundreds. One of the other tavernas had to diversify into being more of a late-night cocktail and Spotify pirate spot, and another had to move down-market to cater to the morning crowd – mostly day trippers from the mainland that came on the twice-daily ferries and stopped for ice-creams or coffee on the way to the beach. Curiously, the last place on George-wannabe row found its niche as a pseudo-English pub called *The George* after the theme of King George V. I imagine the name was either intended as a sleight to mock George, or a knock-off of his operation, named with the intention of fooling people into thinking it was actually George's taverna itself, or at least an offshoot of the unbeatable George "franchise". Although it could never hope to compete with George Taverna, it had the loyal patronage of a regular crowd of Brits that dropped by regularly during the sailing season. The draw was that they served Guinness and John Smith's on draft, along with the usual Mythos and Fix brands, and, like most places in Greece, turned a blind-eye to smoking (grotty yachties using the Ionian as Davey Jones' Waiting Room tended to smoke a lot, possibly to put themselves in the express lane!). Serving English beer on tap was enough to turn it into a well-known watering hole for those that flew the red ensign, and there were plenty of those, right up until Brexit. But I'll come back to that later.

I liked the vibe of "Ag. Nik." as the Brits called it, and so returned to the island often and gradually learned its story. Before I get to the island's history, let me tell you a little more about George.

After he had re-seated *Pizzazz* and me, we had a wonderful meal and enough carafes of wine in aluminum jugs and tumblers to lose count. The prices were not unreasonable, but they were set for tourists, along with more generous portions, so we ate like foreigners, ordering our own individual plates, instead of eating like Greeks and ordering lots of small dishes to share (which I generally prefer). I had the *briam*, which is a kind of Greek ratatouille and potatoes. Anna had the *lamb stifado*. Dean had the calamari and sea bream, which looked appetizing with lemon and chips, but was pricey enough to mean we paid with separate checks. Anna said that the taverna next door, Theo's, had once tried to compete with George's calamari and fried octopus. After beating the octopuses to death on a rock, they used to hang them out in the sun in front of the restaurant to entice the tourists. But instead of attracting people, as he expected, Theo found that the spectacle drew in the crowds to gawk and take pictures, but in the end the mucus-like white bodies just wound up turning the more squeamish guests away. So eventually he had to give up and stuck to specializing in grilled prawns, which were frozen and actually came from the Far East, though I doubt many tourists suspected that.

Theo was a Left-wing idealist and ran his place as a co-op. He shared the profits equally with his staff, who were mainly students from Athens, working on their summer vacation. He could at least rely on the students eating at his place, including George's staff, but it was a struggle to stay in business and the government in Greece made the laws more and more restrictive so that it was ever harder to keep operating as a co-op.

"There used to be all these poor octopuses being tortured on wires, strung out all slimy in the heat and starting to smell," said Anna. "The fisherman still catch them

from the sea wall. And now there's all these black stains and splatters all over the place where they threw the poor things down to kill them."
"I bet animal-rights activists spilled a lot of ink over that," laughed Dean, and instantly regretted it because his wife socked him hard on the shoulder.
"Ouch! Stop! I'm not a cephalopod!" he joked.
Even before Shirley Valentine had been serving up fried egg and chips to British grecophobes, the Greeks had long ago learned to tailor the local cuisine to what the tourists expected. So much so that on the last day of the season a tout outside a Greek restaurant in Crete once said to me, "Come on in and enjoy the food. This is your last chance. The season ends today. From tomorrow *there will only be Greek food.*"
"Only Greek food? No more gyros? No more souvlaki?" I asked, skeptically.
"No," I was surprised to hear him say. "Gyro is Turkish food. Souvlaki is from Skopje."
By Skopje he meant Macedonia – a sore point with most Greeks.
"What about moussaka?" I asked, certain that must be the most Hellenic of Greek dishes.
"That's from Bulgaria," I was surprised to hear.
So what did Greeks eat after the t-shirt and flip-flop-clad masses left for the season? Mostly, sheep and goats were running scared from the dinner plate, but generally the prices got cheaper, and you often got free mezze placed in front of you as soon as you sat down. Complimentary desserts and glasses of ouzo, raki (tsikoudia) and metaxa came round a lot more liberally than during the tourist season. Best of all, the Greeks let their hair down and started to enjoy themselves and Greece became authentically Greek once again and not just a tourist trap. Live music, effectively almost banned by onerous EU licensing laws since 2004, crept out of the shadows and the authorities turned a blind eye. Then you could hear things like rebetiko music (a Greek version of the Blues) instead of just "Zorba's Dance" on a digital loop. People often started dancing between the tables and you got to share the Greece that tourists came from all over the world to see in the summer, when unfortunately it didn't exist. The Greece they came to see wasn't there because they were there. It was a bit like the sun trying to see its own shadow.
Even though it was still in high season, after Dean, Anna, and I had finished our meals, George came round with glasses of ouzo. In most parts they never asked you first if you would like a complimentary drink (or even food). I assume no one that has visited Greece has ever had any special dietary requirements, or food allergies, and they've never come across a teetotal Baptist or recovering alcoholic before, judging by the way they unashamedly plied drinks on their guests. I found Greeks were moderate drinkers and I hardly ever saw an obviously drunk Greek.
I asked George to sit and join us for a drink. He was happy to do so even though the restaurant was still buzzing with customers. As the owner, his job was largely ceremonial and he was comfortable adopting a regal posture, mostly hob-knobbing with his guests rather than actually helping out with the service.
The waitress, who had found us our new table, turned out to be George's daughter. Like Anna from Barcelona (Dean's wife), her name was Anna (Αννα), the same as the Hebrew name Hannah, which means "grace" or "beautiful". She was not really

beautiful, just pretty and innocent looking in a charming girl-next-door kind of way – assuming you lived next door to Athens.
Briefly, out of the corner of my eye I caught her incongruously lighting up a cigarette and got a fleeting glimpse of a world-weary Édith Piaf, which perhaps foreshadowed her future self.
There was another waiter called Antonis who was an Anarchist and student of political science in Athens. Later George confided to me that he hoped Antonis and Anna would get married, but I thought that was highly unlikely. George seemed to be blind to the fact that, to my eyes at least, Antonis was subtly gay. Though not flamboyantly or overtly. If he was romantically attached to anyone, I presumed it was probably to Theo from the co-op.
Anna's sister, Maria, also waited on tables, while George's aged parents seemed to spend all their time manning the cash box at a table next to the bathrooms where visiting yacht crews could shower for €2.50. The parents sat drinking cups of Greek coffee and talking animatedly and seemed to do little else, as far as I could see.
George had a son too – Kostas – but I never saw him working in the restaurant. He seemed to spend all his days riding an ATV-style quad bike around the village at high speed (with a big sticker saying "live free or die"). If he wasn't tearing around he was usually sitting under a tree in the shade texting on his phone. He was an overweight youth and seemed to me to be a complete looser. But his mother doted on him. Against George's protests, she refused to let him work in the family business simply because he preferred not to. So after he graduated from the village high school he generally spent his time lazing about with Mr. Panos' boy, Yannis.
Mr. Panos owned the rival establishment next to George's Taverna and Theo's place. Curiously Kostas seemed to have a closer relationship with Mr. Panos, than with George. Since Kostas resembled Mr. Panos far more than George, the rumor in the village was that he was actually Mr. Panos' lovechild from a time when George and his wife were going through a rough patch in their marriage.
This was not the only rift between Mr. Panos and George. There was also a stark divide in political outlook. I found out that Yannis and his father were avowed fascists.
Late Grandfather Panos, long since laid to rest in the churchyard by old Father Chryssavgis, had been a policeman during the Second World War. According to whether the account was from someone sympathetic to the George faction or the Panos camp, I heard varying claims, or vehement denials, about how he had assisted in the atrocities on the island of Cephalonia when the German occupation forces murdered thousands of Italian soldiers. In September 1943, in what's known as the "Cephalonia massacre", German troops slaughtered about 5,000 Italian soldiers of the *Acqui Division* following the Italian armistice. The claim was that Grandfather Panos was somehow involved, though never prosecuted.
Whatever the family history, everyone agreed that after Yannis came back from his compulsory 9-month military service in the army he was a little "strange". He returned home with an equal passion for Nietzsche and Hitler and he was rumored to sleep with a leather-bound 2nd edition copy of *Mein Kampf* under his pillow. Soon after his discharge from military service George had to politely return a similar copy, a gift from Yannis to Kostas, to a po-faced Mr. Panos.

Yannis convinced his father to join him as a member of the "Golden Dawn" (*Chrysí Avgí*) – the ultranationalist far-right party in Greece. That was all a couple of years before I first came to the island.

On that Harvest Moon night when I first arrived, when George joined Dean, Barcelona-Anna, and me for ouzo, we made small talk. I asked him if his wife was the chef.

He laughed and said, "Chef? She is much more than the chef! She never leaves her kitchen, but she runs this whole island from behind her stove. And sometimes I think she is planning to colonize the mainland too!"

My attention must have drifted off to Antonis and Greek-Anna, who were smoking in a corner while texting on their phones. George yelled at them to get back to work and Antonis looked at me and shrugged, "I guess I am always just smoking and complaining. I can't help it. I am Greek. What can I do?"

"These phones are a curse, " George said. "I argue all the time that they cannot be busy on their screens when we have customers. But they tell me I am a *géros*, and I don't understand that nowadays everyone is on their phones all the time. I tell them it is rude to be on the phone when you are with people. But they say I am old and behind the times. I told them to change the wi-fi password for the restaurant to 'talktoeachother'. But they wouldn't do it."

"Don't you ever text anyone on your phone?" asked Dean.

George pulled an old clamshell phone from yesteryear out of his pocket.

"This is my phone!" he said. "I couldn't text someone even if I wanted. But actually, to tell the truth, I don't even know how. I cannot read or write!"

"Surely you're kidding," said Dean.

"My friend," said George, "I swear on the Holy Bible that I am illiterate, and if you opened the same Bible my eyes would be blind to it."

"But your English is so good," I pointed out. "Didn't you go to school?"

"I was born on this island," George explained. "And like everyone else I went to the village school up on the hill. But I could never learn to read or write no matter how hard Father Chryssavgis and the others tried. My name is George Alexis, but at school my friends, the malakas, they would tease me and call me George *Dys*-lexis."

"Ah, so you have dyslexia," exclaimed Barcelona-Anna.

"That is what they told me," said George. "But they don't call me George *Dys*-lexis anymore. Now I am the richest and most successful man you will find in any of these parts. So now they just call me *George.* Just plain *George*. Nothing else. And I earned that! I reversed the old joke … do you know it? The one about 'George the Goat Fucker'?"

If you have never heard the joke before, it goes like this.

A tourist in a bar in Greece gets talking to the owner and after a while introduces himself. "They call me Sam the Sailor," he says. "What do they call you around here?"

"Ah, forget what they call me around here. They are all a bunch of malakas," says the owner. But this just arouses Sam the Sailor's curiosity and so he presses the owner for more information.

"Well," the owner eventually concedes, "my name is *George*, and I built the church in the village with my bare hands. But you do all that, and do they call you *George the Stonemason* – No!"
"No?" said Sam the Sailor. "Then what do they call you?"
"Well, you see all those fishing boats out there? I made every one of them myself. Every single one! But do they call you *George the Boat Builder* for that*?* No!"
"That's strange," says Sam the Sailor. "So what *do* they call you?"
"You would not believe it! See all the bottles of wine in here? You make all the wine on this island, but do they call you *George the Winemaker* for that? No!"
And then the owner leans in and says, "But you fuck one goat … just the once …"
I had heard the joke before, but Dean almost choked on his drink. We had to slap his back a few times and his face was purple, half with dying and half with laughing.
"Well you sure are lucky they call you just plain old *George*," said Dean, when he had recovered.
"I worked hard for that," said George. "And specially because I fucked so many goats along the way too!"
I saw Anna's jaw drop.
"No, just kidding," said George rising to his feet. "I prefer sheep!" he said with a roguish wink. "I hoped you enjoyed the lamb stifado. It was an *intimate* friend of mine. Yamas!"
And with that he banged his tumbler of ouzo on the table twice (as is the custom), drained it, and, with a broad smile on his face, he left us.
It has to be said, *George was unique.*
The next day, after the two boats rafted alongside me had left, George came to my boat and asked, "What time you leave?"
"I've decided to stay one more night," I said.
I could see by George's expression that he didn't like that idea much.
"Hmm," he mused. "This position is not good for you. Tonight there is a big storm from the North. The waves come right into the harbor here. It is not safe for you."
"I checked the weather forecast," I replied. "It's supposed to be calm."
"I know the weather here very well," said George. "I have spent my whole life here. Tonight there will be big winds. I have a better place for you!"
I was sure he was bluffing, and was considering telling him my own fib – that I had windlass trouble, perhaps – so that I didn't have to moor astern with anchor. Instead I first asked where he wanted to move me.
"There on the inside of the harbor where it is most sheltered," said George. "There is a secret supply of fresh water there for you."
"Can I go side-to?"
"No problem," said George.
I had a water maker on my boat for desalinating water, but I didn't want to risk running it in the harbor because near built-up areas the seawater is usually not very clean. Since I was keen for the opportunity of hosing down my decks and filling my tanks with fresh water from shore, and since I could still moor with the convenience of being side-to on the quay, I was happy to move. I maneuvered to the other side of the harbor and George took my lines. He showed me a small tap hidden behind a

wall that the fisherman used, and the stretchy hose I had on board was just long enough to reach it, so I was satisfied.

That night the weather was dead calm, just as forecast, and I couldn't help noticing that George had rafted a dozen yachts from a local charter company in the spot I was moved from – the very same spot that was supposedly too rough to berth in! I didn't care much either way, even when I was later sandwiched in and had to suffer people stomping over my deck at all hours of the night to get to their boats, which George had rafted up against me.

Dean and Anna had told me that there was a little bakery up a steep climb through the village that sold a wonderful orange-cake, which was supposedly heavenly with coffee. So in the morning I walked up the hill through the village of pastel colored Venetian-style houses, drenched in bright mauve bougainvillea, fragrant angel's trumpets, fruiting grapevines, and scowling cats, and followed the complicated directions I was given past two other bakery shops to the most modest of the three on the island. Although the bakery was unprepossessing, the cake and coffee turned out to be as delicious as advertized. But I wondered how three bakeries managed to stay in business in such a small village when just one of them would have been ample for supplying the whole island. Nikos, at the *Nikos Beach Bar*, solved the mystery for me later that day.

The beach was a kilometer from the village along a narrow lane that was just wide enough for Nikos to pass in his classic Mini Moke (a mini jeep from the Sixties – "moke" being a British slang term for "donkey"). Apart from the ATV that Kostas, had, the Moke was the only gasoline driven four-wheeler on the island. Other than that, there were just two electric golf carts (one of them owned by George) and all the other vehicles were scooters. Nikos had converted his jeep to run on liquid natural gas (LNG) using a conversion kit that many Greeks used, even on the mainland. Fuel and LNG was brought to the island by order once a month on a special ferry. A garbage truck came on the same ferry and it made the rounds of the village and then returned all the island's garbage back to the mainland for disposal. The ferry also brought the diesel that was used to power the whole island from an electric generator housed comfortably out of earshot from the inhabited part of the island. The village itself was self-sufficient with water, which was pumped from a borehole.

Nikos explained to me why there were so many bakeries on the island. He also explained to be why there was such a duplication of tavernas and mini-markets. We chatted over a beer at his beach bar while his tiny little fishing boat bobbed up and down next to a rickety wooden pier that ran out into the gin-clear Mediterranean waters.

Up until 1953, the main town on Nisos Agios Nikolaos was Ormos Aetolofos (Aetolofos Bay). I sailed to Aetolofos later and found it to be a delightful anchorage underneath a bluff with two abandoned old windmills. The village there had been deserted since 1953 when it was devastated by a huge earthquake, which also destroyed the local water supply. Without water, the inhabitants decided to migrate to Agios Nikolaos village rather than rebuild.

I found there was a large yellow and white church in front of the ruins of Aetolofos. It was the only building that survived the earthquake so it was considered especially

blessed. Every Sunday a band of old widows, dressed in black, who used to live in Aetolofos, made their way along a rocky old road to clean the church and say prayers. When I went ashore I found a spotless blue and white Greek national flag flying out in front, alongside the regional flag – a yellow field with a black crest and double-headed eagle. The church doors were unlocked and I went inside to discover that the dome was covered with medieval murals of saints with expressionless faces. The idea was that you were supposed to paint your own emotions onto them, and to me the figures looked as solemn and forbidding as the ruins. So presumably the aesthetic device worked.

In stark contrast to the church, the rest of the village was mostly just foundations and rubble with nothing much left taller than about shoulder height. I found stray goats picking their way through the stones. One of the buildings had what was left of big oil vats and the remains of a large, derelict olive press from yesteryear. Nikos explained to me that the refugees from Aetolofos and their descendants were still called "The Newcomers", even after all the time that had passed since the earthquake. What accounted for all the duplication of businesses in Agios Nikolaos village was that, after they moved, The Newcomers continued with their old professions and simply reopened the shops and tavernas they had once had in Aetolofos. So almost three generations later there were three bakeries, three mini-markets and far more restaurants than the little village could really support. Over time they had to differentiate, but the residents of George's village still resented The Newcomers to some extent. In spite of Father Chryssavgis and his predecessor's efforts to smooth over the differences, the two factions still competed fiercely against each other, and the bitterest struggle was between the bakeries. When I arrived, the bakery wars were still raging as intensely as ever.

Cp. 2. The Bakery Wars

In the last few decades the fish stocks had declined due to commercial overfishing in the Ionian. The decline in fish stocks meant that most of the fisherman had to switch from catching fish to catching tourists. The tourist trade was far easier and far more profitable, but some of the die-hards still stuck to the traditional ways and served the restaurants on the island with a meager and ever-dwindling catch. They provided the last veil of authenticity, but secretly most of the seafood offered on the menus came frozen from local fish farms or from the international fish markets – and the high prices reflected that.

The families driven out of the fishing industry generally gravitated towards opening up tavernas. George's grandfather was a fisherman and "George Taverna" was originally a fishing cottage that the family had lived in for generations. I discovered that, in front of the Church of Agios Nikolaos, there was a paved square with an outsized monument to Grandfather Alexis. The monument was to commemorate a minor incident in 1948 during the Greek Civil War when, nominally as a member of the Democratic Army of Greece, George's grandfather had rescued a drowning sailor from the Hellenic Navy (the enemy) while he was out in a storm in his fishing boat. Ostensibly the memorial represented a rapprochement between the two warring factions, but some people in the village, particularly Mr. Panos, despised it.

Mr. Panos claimed that his own father (of the "Cephalonia massacre"), an unsung Newcomer, worked himself to death, but George told me that he actually died from excessive smoking. Mr. Panos resented the memorial largely because it was so ostentatious and also because it was built on church property secured with an unseemly large donation to the church by George's father (who now, in his retirement, lived a life of ease and spent all his time drinking coffee and collecting money for the showers in George Taverna). The donation was from the profits he gained by being the first to switch from fishing to the restaurant and hospitality business as tourists started flooding in during the Seventies and Eighties.

As to the bakery wars, George's cousin owned the bakery on George-wannabe row at the harbor. It was small, but due to its location, it captured most of the casual business.

The opening gambit in the season was when Cousin Alexis started offering gelato with her usual bakery items. The Newcomer, Mr. Panos' cousin, who owned the bakery right at the top of the hill, unable to compete with 12 flavors of cool deliciousness in the summer heat, responded with an A-frame pavement sign. She invested in high quality graphic images of the closest thing she could find from stock images on the Internet that matched her baking talents. Top billing went to her signature baklava, followed by a mouthwatering picture of waffles covered in chocolate. She started putting the sign out right in front of the gelato machine each morning. It said provocatively in English, "Best bakery in the village, just a short walk up the hill."

Which resulted in a minor controversy in the village, much discussed over coffee by the locals, about who it was that kept surreptitiously turning the sign around 180 degrees so that the large red arrow pointed in the wrong direction, straight out to sea.

I found out the hard way that it was not "just a short walk up the hill". Because The Newcomers were late arrivals, their houses were generally higher up in the village, way up the slope past the church. And it was a steep and sweaty climb to get up there in the summer heat. At every turn in the narrow streets the Panos bakery had billboards giving potential customers encouragement in their journey.

The last sign in the series said, "Bakery is at the end of the street, where the village ends."

That was not entirely true. The village didn't really end there. It was more a kind of "do not pass this point; *there be dragons ahead*!" kind of warning. The reason the owner didn't want customers going any further was to stop them finding the bakery with the delicious orange-cake, just off to the right.

When I walked up to the orange-cake bakery I had to pass by the Panos place, and I discovered that they had set out tables and umbrellas in the street to block the path to the orange-cake bakery as best they could. There was always a strategically placed old man sitting outside who asked passers-by, "Do you want bread?" in a thick accent. He looked innocent enough, but I found out later that he was one of the Panos' relatives and just a shill for the bakery. Every time I went to the orange-cake bakery I had to run the gauntlet past him insisting that the bread was "Fresh today; very fresh. Best in the village!"

The old woman that owned the orange-cake bakery was one of the original inhabitants of the village, not a Newcomer, but she was poor and had a very limited range of wares on offer. But everything she baked was undoubtedly the best and most affordable in the village, so locals who were not Panos sympathizers all got their bread from her. And outside the tourist season the Panos bakery closed, so even the enemy shopped there during the winter.

The first season I came to the island there was a major escalation in the bakery wars. There was a furor in the village because the orange-cake bakery lady's husband, a old man with a large handlebar moustache and flat nose, had taken the liberty of writing "pies; best bread", with an arrow pointing the way in black paint on the old stone steps at the base of a staircase that led directly up to the orange-cake bakery through a back route that bypassed the Panos bakery. Apparently this was in retaliation for the billboards with new color graphics. Villagers were divided about whether this move was justified or not. Some pointed out that the orange-cake bakery already had its own billboards in the street leading up the hill, so fair was fair. True, they were hand-painted in black and white, with crudely stenciled images of bread etc. – but there were lots *more* of them. And besides, they marked an unspoken détente in the bakery wars, so there was no point ruining a fair truce. But others pointed out that upgrading the Panos billboards to color graphics was an unwarranted overreach and highly provocative.

The whole thing gained an extra dimension when it turned out that the color billboards were paid for by a loan from George. In exchange for his treachery, the old lady in the orange-cake bakery refused to talk to him from then on. Every day

someone from George Taverna would come up to get bread for the restaurant, but when she handed over the crates of bread she made sure to do it in sullen silence, and when George came to settle accounts at the end of the month she would snatch the money from his hand and cock her head with a proud but hurt expression, so that he was in no doubt about her feelings.
George insisted that his wife made him do it, but the old lady refused to believe him. Her rival was one of the ones who made the weekly pilgrimage to the church at Aetolofos, and the orange-cake lady said to George, "I think you have her. I hope she prays for your soul in Aetolofos on Sunday!"
Even the way the old lady spoke the word *Aetolofos* was damming.
But I highly doubt that George had any romantic attachment to her rival. For one thing, every Saturday, weather permitting, George would roar off to the mainland in his speedboat to the port of Mýtikas. Ostensibly it was to pick up provisions for the restaurant, yet sometime later, when I got to know him better, I accompanied him on one of his trips and was surprised to discover that he actually had a mistress in Mýtikas. He broke away from me for the afternoon and returned to his boat a renewed and relaxed man. "I know a private masseuse in town," he explained with a chuckle.
All the other tavernas stocked up before the season and then got supplies monthly by ferry. But George insisted that he needed weekly trips to make sure he got "only the freshest and the best." And every time he would come back with flowers for his wife. "They are not from my masseuse," he assured me. "Otherwise perhaps my soul *would* need praying for!"
I asked him if he was religious, and he simply replied, "I am a philosopher."
"Does that mean you are an atheist?"
"I am a pagan," he said. "All true Greek men are pagans at heart. And all true pagans are philosophers."
I don't think George was really authentically pagan. In Greece, ninety-eight per cent of the population is officially Orthodox Christian. Non-Christian religions, except Islam and Judaism, are prohibited. But in 2017, reconstructed ancient Greek religious practices, known as *Hellenism*, were legally recognized as a "known religion". Although only a handful of people followed the creed, it attracted positive attention from nationalist extremists because of the emphasis on old Hellenic glories.
I happened to be visiting Agios Nikolaos when a Hellenic Neopagan member of parliament made an official visit, which was arranged by Mr. Panos. He organized a small welcoming party of girls in traditional dress.
In spite of the MP's unorthodox religious beliefs, Father Chryssavgis participated in the laying of a wreath with him at the statue in the village dedicated to Greek war dead. The assembled crowd then sang the national anthem. Afterwards the MP gave an impassioned speech, which I could not understand because I knew hardly any Greek. George translated it for me. Mostly it was about the controversy around the use of the name "Macedonia". The country north of Greece, formerly the Republic of Macedonia, wanted to change its name to just plain "Macedonia". The Greeks, particularly the Right-wing, objected strongly because Greece's northernmost province was already called Macedonia and millions of ethnic Greeks

identified themselves as Macedonians, but they were unrelated to Slavs and didn't want to be associated with Slavic North Macedonia. Greeks also accused North Macedonia of appropriating cultural icons like Alexander the Great. Therefore the Right wing insisted that North Macedonia call itself "Skopje", which was the name of the capital city.

Eventually an agreement was reached between Greece and North Macedonia in 2019. From then on they would call themselves the "Republic of North Macedonia". But that happened after the MP's visit to Agios Nikolaos. At the time it was a hot-button issue and the MP's speech inflamed emotions in the village and got old folk yelling and shaking their fists in the air. For a brief moment I thought Greece might be on the brink of war.

Then the MP took his staff and security detail and spent the rest of the day relaxing on the beach at the *Nikos Beach Bar*. Apparently his "staff" seemed to consist mainly of his children and other members of the family. While the politician lounged around in his swimsuit sipping coffee, Yannis and Mr. Panos, dressed in Sunday best, perched on the edge of their chairs and harangued him all afternoon in a high-level summit. Topics ranged from subjects like the "Greek Gold" to demands that the German government repay an infamous loan that was forced upon Greece during the Axis occupation.

If you have never heard about the "Greek Gold", I advise you not to mention it too loudly in Greece unless you are prepared to see Alexander the Great himself raised from the dirt beneath your feet in vengeful anger. I once had the experience of innocently talking about the "Greek Gold" to a Norwegian yachtsman and had a stranger on a delivery bike come up and join in the conversation, completely uninvited. He was just about to drive away, but on hearing the topic of our discussion, he parked his bike and crossed the road to join in!

During Nazi Germany's bloody and destructive occupation of Greece during World War II, Hitler's regime looted all the gold from the treasury in Athens. Understandably Greeks wanted it back, but Germany, right up to that day, stubbornly refused. And that made Greeks angry. In addition to that, the Greek government had promissory notes from Germany during the occupation that amounted to far more than the gold. When Alexis Tsipras came to power in 2015, he told Germany that Greece would "lay claim to the wartime debt."

These were not war reparations; they were standard debt instruments that governments commonly owe each other. They were called *Besatzungsanleihe* – forced loans that Germany demanded from the Greek treasury from 1942 until 1944 to support the German occupation of Greece and to pay for provisions that were sent to Rommel's *Afrika-Korps* that was fighting in North Africa. In Athens, 40,000 people died of starvation during a time when food was exported from Greece to support the *Afrika-Korp*s. Those monthly loans demanded from the Greek government amounted to roughly €10 billion in 2019 money. With interest, they would amount to something like ten times that amount. Which is ironic, because in 2010 Athens went bankrupt and the EU bailed it out to the tune of around €274 billion in loans, of which about €65 billion came from Germany. So effectively Greece didn't owe Germany anything, and yet after 2010 it was plunged into dire

austerity to pay back the loan – a virtual impossibility in anything less than forty years.
Greeks never even got to see the "bailout" money. In actual fact it was all a scam. As soon as the "bailout money" reached Athens, it was siphoned off to save Deutsche Bank, Finanzbank and the other Frankfurt-based zombie-banks that were effectively bankrupted in the crash of 2008. The Greek bailout was just an elaborate scheme to cover the German and French bank's exposure to Greek loans. Chancellor Angela Merkel had gone cap in hand, on Frankfurt's behalf, to the German Bundestag to get €406 billion from her horrified fellow parliamentarians to cover the fallout from the toxic trades German bankers had made in US-based derivatives up until 2009. It turned out that it was not nearly enough to save the banks, but Merkel knew that if she went back to the Bundestag to ask for more it would cost her job, if not her neck. So to pay for the predatory lending and investment mistakes of the French and German bankers, the IMF was roped into the charade of pretending to the world that the international community and EU were lending to the Greeks for the noble purpose of saving the global financial system. That allowed the Franco-German banks to offload their exposure to Greece and transfer it to the IMF, its international co-funders, and to the already anemic taxpayers of Europe.
This cynical transfer of losses did not fool the public in Greece one bit. They had no illusions about why they were being scapegoated and condemned to bitter austerity and the workhouse.
Sailing amongst the islands, I was to discover that it was as if a clock stopped in 2010. Many parts of Greece resembled what you might expect if a neutron bomb had hit the country. Construction sites were frozen in mid-development, with rebar poking up from concrete in bizarre ruins that would never be completed, and yet no one had the money to demolish or remove the unsightly blemishes on the landscape. So they sat there year after year as increasingly ugly reminders of the dream times, and of what might have been, if the music had not stopped.
Mr. Panos and the MP discussed all these weighty subjects, while Yannis listened intently. I suspect the only thing they accomplished was to ruin the MP's afternoon, but the visit had a powerful effect on Yannis.
The next day I was told that he was seen arguing with the waiters from Theo's co-op that it was high time for a coup in Athens. Many of them, including Antonis and his friends, agreed. But they were Anarchists and since Yannis was a self-avowed fascist, they disagreed on whether it should be a popular revolt by the People, or whether it should be a military coup. Yannis insisted that only a military coup, Grexit, and a return to the old currency, the drachma, could solve the problem of youth unemployment, which stood at a rate of around forty percent.
Antonis told me later that he argued with Yannis that his idea would wind the clock back to the dark old days of The Junta that lasted from 1967–1974.
"Ah," said Yannis, "that's why I say it has to be a dictatorship of *patriots*. Only *patriot*s will do."
"As if that made all the difference," laughed Antonis.
Yannis evidently left the debate considerably fired up, because apparently that night he decided on a plan of radical action.

The next day the village was alive with gossip about a large red swastika that someone had painted overnight on a prominent outcrop of rock above the diesel generator in full view of the harbor. Looking up at it, I thought it looked rather like a running man that had been drenched in red paint and then cruelly catapulted against the wall with a slingshot.

George's daughter, Anna, Antonis and other student-waiters met in Theo's place for a council of war. They decided that they would embark on an appropriate countermeasure of their own. They plotted all morning on a plan of action. The next night, in the early morning hours after the tavernas had all closed, they dressed in black, donned ski masks and balaclavas, and began their "operation".

They took all the materials and equipment that they had gathered during the day and deployed them with cat-like stealth in the moonless night. The operation was a complete success. They rendezvoused back at Theo's and celebrated with tots of metaxa before retiring to bed.

When dawn broke, the villagers of Agios Nikolaos awoke to see the results of their direct action: *a cute red rose stenciled beautifully over the swastika.*

Cp. 3. Extinction Rebellion

At the end of the season, George's daughter Anna, and Antonis, got involved in Climate change activism and set up a chapter of Extinction Rebellion (XR) in Agios Nikolaos. The two of them gave a presentation in Theo's taverna one evening in early October after most of the charter boats had left. It was well attended by people from the village and by live-aboard yachties too.

I went along with Dean and his wife and we found that George was already there with some friends of his I didn't know. Father Chryssavgis was there too, dressed in his usual black, ankle-length cassock (symbolizing a priest's death to this world) and his clerical *kalimavkion* – a flattop, pillbox-shaped hat worn by the clergy in the Greek Orthodox Church. He sat at the back stroking his long white beard, cut as square as his *kalimavkion*.

Theo had generously provided free mezze and asked for a donation to cover drinks. We ordered beers and sat and listened to the video they played through a large-screen TV, which they paused and translated into Greek, mostly for the benefit of the older folk, since most young Greeks learned English at school and were very fluent. The video was a talk given by Roger Hallam, one of the co-founders of XR in London. It was entitled, *Time to Act Now*. It was a talk he gave all over Britain and Europe to drum up support for the "Autumn Rebellion" in 2019. They called it "The Hard Talk".

Anna and Antonis asked everyone to save any questions until the end so that they could get through the video first.

The first half of Hallam's talk was a breakdown of the latest climate science that he said pointed to a dire global emergency – "as bad as it gets" was how he phrased it. He went through what he called three "killer facts" about climate change. Firstly, that the Arctic is melting. Hallam said seventy-five percent of the permanent ice in the Arctic had melted in the last thirty years. He mentioned the "latent heat effect" that would come into play when all the Arctic ice melted, possibly somewhere between 2022 and 2025. Anna and Antonis struggled to translate "latent heat effect" into Greek and so there was a pause while they spent a bit of time Googling it. Basically it means that once the ice is gone, the dark blue ocean water, having lost the reflectivity of the white ice, will heat up dramatically. Essentially, if you get a liter of ice and melt it, and then apply the same amount of energy to the melted water, it raises the temperature of the water to about 80^{o} Celsius. That's not to say that the sea in the Arctic would get to 80^{0} C, but it gives a rough idea of how alarmingly the seawater heats up, compared to ice, once the ice is gone.

Hallam's second "killer fact" was that since the Industrial Revolution began, the average global temperature had increased 1.1 degrees Celsius. He said that the Paris Climate Agreement was the "biggest mass delusion in the history of humanity, because it has this lie that we've got to stay below two degrees Centigrade."

"The simple scientific fact of the matter is that two degrees Centigrade is already *locked in*. I spend a lot of time in academia; it's well know in academia that it's bollocks," he said.
The argument he gave for that is that the "carbon lag" is about ten to thirty years, and so it takes about that long for the global average temperature to catch up with the CO_2 emissions in the atmosphere.
"So even if we stopped putting carbon into the atmosphere tomorrow," said Hallam, "you would still have the last ten to twenty years of carbon still coming through."
He said a recent peer-reviewed scientific paper estimated that meant that there was still 0.8 of a degree warming that was still to be accounted for.
Next, there was the Global Dimming Effect.
The global heating due to greenhouse gas emissions was actually counteracted by an opposing cooling effect, also indirectly caused by industrial emissions, but it wasn't quite as simple as *the pollution shields the sunlight.* What actually happened was that the pollution (mainly from coal-fired power stations, which is where most of the world's power came from) caused water droplets to form in the atmosphere. The water droplets reflected a large percentage of the sunlight back into space before it could contribute to global warming. And that cooled the earth.
Since the Nineteen-Fifties scientists had noticed that the amount of sunlight reaching the earth's surface had been steadily declining. Then in 1990, coincident with legislation being passed in the United States and Europe to clean up the air, the trend began to reverse as the sulphate aerosols in the atmosphere began to diminish.
The dilemma was that fossil fuel burning needed to stop in order to prevent catastrophic global heating, except that if that happened then Earth would lose the global dimming effect of the aerosols and become anywhere from 0.8 to 1.5 degrees Celsius warmer. So it was a kind of "dammed if you do; damned if you don't" situation. And it would be unwise to *increase* pollution in order to try and combat global warming, because that would increase CO_2 levels in the atmosphere with catastrophic long-term effects (not to mention the negative health effects of the pollution and the acidification caused to the ocean). It would be like trying to kill lung cancer by smoking harder. So that was not an option.
Overall it meant that fossil fuel burning had to stop, but as a consequence the concomitant loss of global dimming would have to be factored in to the resulting temperature rise, and that rise was likely to be huge. Hallam claimed that it was "up to 0.7 of a degree", yet from the data at the time, I think that was an underestimate.
After translating all of this into Greek, Anna and Adonis continued the video. Everyone in Theo's taverna seemed as stunned as the audience in the video.
"Did anyone see that slightly inconvenient article that came out last week that's now established that the carbon in the soil will increase temperatures by another degree by 2050?" asked Hallam.
Basically, heating up the soil causes it to release more carbon. So an average temperature rise of two or three degrees was already locked in. In the middle of continents that rise translated to four or more degrees, and at that temperature you can't grow grains at scale reliably.
"That means one thing: *starvation!*" warned Hallam.

The third "killer fact" was that CO_2 was at 415 parts per million (ppm) at that time. "It wasn't so long ago that they were saying 350 ppm was the limit," he said. Since CO_2 levels increased by 3.5 ppm in 2018, it was reasonable to expect that they would reach 450 ppm in the next ten years.

"Which means two degrees Centigrade locked in," he claimed. And since that figure was going up exponentially, maybe that was as soon as *five to eight years*.

"So we've been lied to," said Hallam. "But that's not the real bad news – is it? The real bad news is that we are facing social collapse."

He said if you want to know what social collapse looks like, you should check out Somalia or Afghanistan.

At the mid-point in the address, Hallam said, "So yeah, we all know about the climate crisis, right? And we can *feel* it as well. So I'm not going to spend the rest of the talk talking about that. I'm going to talk to you about something – dare I say it – that's more difficult. And the more difficult thing is knowing there is something we can do about it."

He claimed that the social science says that there *is* something people can do about the climate crisis. "The real challenge is: 'are you ready to accept the social science?'"

He said that in the last three decades there had been a lot of research into how to effectively change a society in a radical way. Erica Chenoweth, a social scientist, came to London to talk about how this has been done dozens of times, with clear causal factors. She told the founders of XR that they "no longer had any excuses."

Over the next half hour Hallam explained what he called the "101 Social Science" of radical social change.

He said, "And the fundamental thing that's come out of the social science is that if you want to rapidly change the political direction of a society, in the shortest amount of time, there's one way to do it, and that way is mass-participation civil disobedience - *period*."

Hallam said that civil disobedience works because it causes disruption, and "no one takes any notice of you unless you cause disruption".

Disruption creates attention, and attention is the first point at which people start to change their opinions, he claimed.

The other reason why civil disobedience works is because of *sacrifice*, he said.

"Without suffering, there's no change," said Hallam. "It's a hard truth, but it's a fact." So if you sacrifice, then people take you seriously, because you're 'walking your talk'; because action speaks a thousand words; because information never changes entrenched power. What changes people is seeing people suffer for their beliefs."

The remainder of the video was about how rebels should *deliberately* get arrested and sent to prison.

Hallam said that there was a plan to fly toy drones to disrupt air traffic at Heathrow, which was an "independent action" because it was controversial. The "carbon corporate state", as he called it, was liable to throw activists in prison, and Hallam claimed that was their "Achilles Heel". This was supposedly based on the results of Gandhi's Salt March in India in 1931, the Freedom Riders in the American South in 1961, and the Children's Crusade in Jefferson County, Alabama in 1963.

"So don't think you have to be a hero, don't think you have to be a saint," said Hallam. "Because you're not. You're just normal people seeing something beyond bad coming down the road."
He took a long sip of water and, after a dramatic pause, said, "Okay, so I've come on to the controversial bit of the talk now."
Nervous laughter rippled through the crowd in the video.
Anna translated it and the laughter echoed in Theo's place, but it was more subdued.
"Let's just look at this little taboo – going to prison," Hallam said. "My proposition to you is, in the wider scheme of things, going to prison is no big deal."
He claimed that one of the upsides to austerity is that there is not enough space in prison to arrest people, so in Britain they let you out after two hours. He said that if you fly drones twice at Heathrow they'll hold you on remand but it would be a "holiday". He said he's been to prison several times and it's nothing but a "book club" where you get three meals a day and take a nap whenever you like.
His audience tittered nervously.
"So it's no big deal, right?" he exclaimed. "It's not as bad as all the people who want to take your children to their deaths make it out to be. This machine*, that we have to dismantle*, wants you to be afraid, because that's the primary reason why they are going to be able to take us to our deaths. Elites have been doing this all through history."
He said that Extinction Rebellion is not about being popular. XR is about getting a "job done".
"And I have something to tell you guys, right, in case you're not totally aware of this already. It's that all the people that are going to sort out the climate crisis for you, *are not*! They haven't done it for thirty years, and they're not going to do it in the next thirty years."
He said that thousands of people would be coming on the streets in the autumn, because they no longer had any excuses.
The video ended with: "Rebel for Life, October 7th-18th 2019"
I glanced round the people at Theo's. They sat in dumbstruck silence.
"Υπάρχουν ερωτήσεις? Are there any questions?" asked Antonis.
An old widow in black said in Greek, "Why didn't the government tell us this?"
Dean whispered the translation to me.
Greek-Anna and Antonis said that it was for the usual reasons. The government was too entrenched with the moneyed interests and too resistant to change to address the climate emergency.
Greek-Anna said, "These liberals are like blind parachutists. They say, 'When I feel the ground with my cane, I'll open my chute.' By the time they act, it will be too late. We will have passed all the climate tipping points."
"Is it really that bad?" asked George. "How long have we got?"
"No one knows," said Anna. "But we should all do our own research and estimate for ourselves, rather than believe the authorities."
The woman who owned one of the mini-markets in the village said in English, "I heard these people want everyone to stop flying. If people stop flying the tourists will stop coming to Greece. What will we do then?"
There was a general hubbub in Greek in response. Voices were raised.

The next part of the conversation was a heated exchange, mainly between the older folk and the young people. I couldn't follow the details of what it was about, and it seemed too fast for Dean to follow either.
Just when things were getting really fractious, Father Chryssavgis stood up and hushed everyone down.
He gave what sounded like a solemn scolding to everyone in the room, with measured and deliberate hand gestures, often raising his finger to emphasize a point. By the end of his sermon he was in full stride and bellowing in resonant tones. The older folk were nodding their assent and saying "ναί" in affirmation. Then he seemed to conclude his rant and insisted everyone adjourn the meeting. Some of the older folk applauded, but the younger members of the audience mostly just seemed to be looking at the floor.
I asked Dean what Father Chryssavgis had said.
"As far as I could make out," Dean told me, "He said that Patriarch Bartholomew, who they call the 'Green Patriarch', has said that science and faith are already merging forces to mobilize people to address the climate crisis."
He said that the Green Patriarch had already been attending United Nations Conference of the Parties (COP) on Climate Change.
As for Father Chryssavgis himself, he maintained that climate change was a symptom of "spiritual disorder" in the world. He said that people should combine to care for the natural world along with their worship of God's Creation. The modern lack of care for the world went hand in hand with general moral decay; which, according to him, included things like homosexuality, which he claimed, "degrades the dignity of a man's own sex, making him lose his self-respect and the respect of others, and causes him to become out of line with God's creation."
"Was that bit aimed at Antonis?" asked Barcelona-Anna.
"Who knows," said Dean. "But he warned people against falling for 'false prophets of doom', which I presume was a jibe at Roger Hallam."
According to Dean, Father Chryssavgis said that to correctly interpret the End Times, one should go back to the opinions of the Apostles and early Church Fathers and not be inclined to listen to alarmists and fear-mongers in the present day. He was also keen to remind people that scriptural eschatology was mostly contained in the Book of Revelation and it was the only book *not* used during the Divine Liturgy. He quoted Mathew and Luke and said that the first events of the End of the World will be the "beginning of sorrow: wars, great earthquakes, famines, plagues" and "fearful sights and great signs from heaven."
He said that it was true that the news was full of those kind of things already, and that possibly they would only get worse with climate change, but he cautioned that St. Ephraim prophesied in a sermon that when the Lord comes, at the end of the world, the Jews will accept a false "messiah" – the Antichrist. The Antichrist will rebuild the Jewish Temple of Solomon in Jerusalem, he said. St. Paisios said that a sign that this prophecy is about to be fulfilled is when you see the Mosque in Jerusalem being demolished to make way for the re-construction of the Jewish Temple on the Temple Mount. Obviously all of this would take years to happen, so there was no need to be alarmist or panic just yet. But in the meantime, everyone should pray for the world, and make sure they were in harmony with God's Creation

and with their brother's and sisters, because the fact is that everyone will eventually face judgment by Christ.
"So is he for the rebellion or against it?" I asked.
"He wasn't specific," said Dean. "But I gather he was probably against it."
"I mean why bother, right? What does the Bible say about carbon footprints anyway?" said Anna, caustically.
"It says you will get a set of carbon footprints when God strikes you down with lightning for being so sarcastic," said Dean, blowing her kiss.
"Does the Greek Orthodox Church believe in the doctrine of the Rapture?" I asked.
"No," said Dean. "I think that's just a Protestant evangelical thing."
"Well, when the Rapture comes, all I say is just pray your airline pilot's a sinner, otherwise your plane might be left with no one on the flight deck!" Anna giggled.
Dean said that he knew an old Greek woman who told him that according to Revelation Chapter 13, the Antichrist would have an assistant known as the "False Prophet". The False Prophet was supposed to set up a talking image of the Antichrist (or "The Beast"), and anyone who refused to worship the image would be put to death.
"The Greek word for this talking image is *icon*," said Dean. "So she equated it to the modern cell phone."
Anna began to crack up. "Oh, I get it! The Apple *iCon*. She's so right!"
"Don't joke!" said Dean. "In China it's already illegal to go out without your cell phone."
"Why?" Anna asked.
"For state surveillance. Because otherwise the government can't track you and keep an eye on you," said Dean.
"Okay, it's official," I said. "We are officially now in the End Times."
"Cheers, I'll drink to that!" said Anna.
At that point George, who was just leaving, stopped by our table.
"I have been listening to what you say," he said, raising his finger in mockery of Father Chryssavgis. "Just remember, in Revelation it also says the dragon inside the Antichrist reveals himself and desires worship."
"Suddenly everyone's a biblical scholar," laughed Dean.
"What next?" I joked. "'*Beware the Ides of March*'?"
"What did you think of that?" George asked in a hushed tone, turning serious. "Should we believe Hallam?"
"When I look at him I think Icarus is flying too close to the sun," I replied.
"The whole world is a mess," said George. "I think we all need to change. Maybe civil disobedience is the way. It worked on Crete during the war."
"I think that was violent resistance," said Dean. "I think XR is all about non-violent resistance."
"Though I'm not sure I buy what Roger Hallam says, that what changes a person is seeing other people suffer for their beliefs," I said. "On balance, I'm sure more people where changed by the whip, the sword and the gun than by seeing others suffer for their beliefs. I mean, is martyrdom really the way to go?"
"What about the Christian martyrs in Ancient Rome," countered Anna. "They changed a lot of people through their suffering, didn't they?"

"But on the other hand," I said, "think about how many millions more were converted to Islam by the sword. Or how many people became Christians merely through conquest, for that matter."
"Are you saying that 'Might is Right"?" asked Anna.
"No," I replied. "I'm just observing that the governments have all the guns and money, and 'power comes from the barrel of a gun', so XR has an uphill battle on their hands in the war for hearts and minds. They may win people's hearts in the end, but will that happen *before everyone loses their minds?*"
"LSD," laughed Dean. "That's what we need. Let's put LSD in the public water supply all over the world! That'll help people lose their minds."
"But don't we want to stop people losing their minds?" asked Anna.
"I don't think so," said Dean. "What got us to this world full of super-wicked problems was us following linearly and single-mindedly along a sequential path of rational steps for solid logical reasons. If there's any hope of avoiding a global catastrophe now, it must surely be that people take radical *irrational* action for a change. We've had too much *rational* action. We need something else."
"Like what?" Anna asked.
"Well, like giving up on industrial society and beginning a global program of radical de-growth," said Dean.
"Going back to the Stone Age?" said Anna. "That's crazy."
"Exactly," said Dean. "That's what everyone thinks. That's why I say everyone will have to *lose their minds* if we are going to avoid extinction. If we don't lose our minds, there's no hope."
"That's never going to happen," said Anna.
"I know," said Dean. "And that's the truly crazy part. Weird, isn't it?"
"*#NotGoingBackToTheStoneAge*; #Never*BanningElectrcity*," I added.
Anna thought for a moment and then observed, "The problem with de-growth is that if we rapidly de-industrialize billions of people will starve. Most of the world's population relies on the globalized economy and mass production and distribution of food. So we can't afford to scale back or billions of people will die."
"And what will happen if we keep the industrial system running?" I asked.
"Exactly," said Dean. "The world is trapped. It's the Civilization Trap. We're caught in it. So I think we just established that billions of people are going to die any way you look at it. The sooner the better for the rest, in my view."
"But what about solar panels and wind generators?" George asked.
"You mean renewable energy? It's a myth," said Dean. "It's magical thinking. The global economy could never be sustained by renewable energy. It's just not energy intensive enough to support it. It's too diffuse as a source of power."
Dean explained that the popular techo-philic delusion was that efficiency and better use of resources would mean that we would consume less. However the exact opposite was true. This is the Jevons Paradox.
In 1865, an English economist named Jevons noticed an odd thing about technological improvements designed to increase energy efficiency. Instead of reducing fuel consumption, *they actually increased it*.
Jevons reasoned that it was self-defeating to try to pursue sustainability by increasing energy efficiency because of rebound effects.

At a time when there was concern that Britain may run out of coal reserves to power the Industrial Revolution, Jevons noticed that the newly invented Watt steam engine was a great leap forward in terms of energy efficiency, but instead of reducing coal consumption in Britain, it actually increased it. The more efficient steam engines got, the more money people could make out of them, so the more people bought them and put them to use. So energy efficiency makes people consume more of the planet's resources, not less.

Something similar happened with the invention of the Gatling gun. Richard Gatling said that he invented the Gatling gun to reduce the size of armies and therefore reduce the number of deaths by combat. Yet the exact opposite happened. Gatling's gun greatly increased the number of fatalities and its successors killed millions in the trenches of World War I.

I said that I remembered that when I was at school, kids were told that one day more efficient machines and automation would give us so much leisure time that we would only have to work one or two days a week. We were told that when we grew up the biggest problem we would face would be what to do with all the free time on our hands. But of course mechanization and automation ate up everyone's free time and forced us all to work longer and harder in order to compete.

We were also told that one day nuclear power would make energy so cheap it wouldn't need to be metered. Yet that would have destroyed even more of the Earth's ecology as the population and resource extraction increased to soak up the excess of free energy.

"So nuclear power is not the answer?" asked George.

"It's a question of time," said Dean. "It would take decades to transition to a world powered entirely by nuclear power. And re-building the world's energy infrastructure and transport systems to be carbon neutral would in itself require so much carbon released into the atmosphere that the world would never recover."

George buried his face in his hands. "So how much time do we have?"

"What, until the shit hits the fan? The shit's already hitting the fan! Just keep your eyes on the Arctic," said Dean. "It's all about the *Methane Dragon* and the *Blue Ocean Event*."

"What's that?" asked George.

"Get someone to help you look it up," said Dean.

George shrugged. "I would, but I don't know how. I've never heard of these things before. I don't even know how to look things up. I'm not an academic. I'm a philosopher. You explain it!"

"Your daughter Anna will help you," said Dean.

"Write it down for me," requested George. "I can't remember this."

So Dean wrote it on the back of the bill and George put it in his pocket.

"Is the Methane Dragon something like the dragon inside the Antichrist?" asked George.

"Something like that," laughed Dean. "Maybe worse."

After the rally at Theo's, Greek-Anna and Antonis took two weeks off from college to join the XR rebellion in Athens like the video said. On the 7th of October they took part in a non-violent protest in Syntagma Square based on a creative performance designed to draw attention to the oil and gas exploration that was about to start in

Crete and the Ionian. Greece was just about to lie supine in front of the oil industry, so Anna and Antonis drenched themselves in black paint to represent the oil and lay down on the steps in front of parliament. The truth is Greece was desperate for revenue to pay back its debts to the IMF and to get the ECB off its back.

As for me, during that time I was anchored in the idyllic bay at Aetolofos enjoying the late-season peace and solitude. Dean and Barcelona-Anna anchored nearby on *Pizzazz* and we spent many pleasant evenings together enjoying good food, conversation and wine.

While we were there, I noticed two young French girls arrived each morning and swam out with a frame made of white plastic tubes, exactly a meter square. I went ashore and talked to them about what they were doing. They said they were volunteering to help an environmental NGO do a study on posidonia – seagrass endemic to the Mediterranean, often called Neptune grass – which is an important part of the ecosystem. "The lungs of the Med" they called it. They were doing a survey intended to gather data before Big Oil let rip in the Ionian. The idea was to monitor the effects oil drilling before and after, and use the data as supporting evidence to raise objections to the Greek government about the harm oil drilling was about to do to the local environment. I didn't have the heart to argue with their naïve idealism.

I asked them if they were members of XR, but they said, "We know about it, but no, it's not so big in France."

XR's "Autumn Rebellion" was nonetheless garnishing a lot of media attention in Europe and around the world. However, having followed the movement's story from late 2018 onwards, I got the impression that their momentum was starting to flag and things were going a little bit off the rails. Their "Autumn Uprising" didn't really have the dynamism and verve of the highly successful "Spring Rebellion" in April. It was starting to look like an encore nobody called for. There were 1,130 arrests during the group's 11 days of demonstrations in April, which is what they wanted. By comparison, the mid-summer rebellion was lackluster, and carrying on the same kind of street protests (which they insisted on calling "blockades") during the Fall, made things seem a bit stale. "Like an unimaginative parrot" as Dean said, or "like a nagging wife," in the words of Anna.

In spite of Roger Hallam's claim that the campaign was based on "cutting edge political science", in truth, by the end of 2019 it was starting to look a bit like *protest as usual against business as usual.*

A broad swathe of the Establishment reaction was: "The climate picture is grim and action is desperately needed, but dressing up and parading like clowns isn't constructive." And, "causing disruption and making it harder for working people to go about their daily lives and get to work just breeds frustration and resentment and the message about the need for urgent climate action is lost."

The British Prime Minister, Boris Johnson, called them "uncooperative crusties" and said they should stop blocking the streets of the capital with their "heaving hemp-smelling bivouacs."

XR's Autumn Rebellion was fairly big in Melbourne and Sydney, but I saw one frustrated Australian journalist sum it up as, "Havoc is not going to change hearts and (stubborn, science-resistant) minds. It will only infuriate and frustrate everyone

and do nothing to sway those skeptics wavering over which side they want to join in the climate trenches."
It was all too easy for Conservatives and Climate Deniers to dismiss the whole thing as, "It's all just the antics of the Looney Left."
The Conservative press trumpeted a YouGov poll that claimed over half of the public in Britain opposed Extinction Rebellion's aim to "shut down London."
Sensing the wind of public opinion turning against XR, after a week the police banned XR protestors from the whole of London. There were a few holdouts in Trafalgar Square, but in general the protestors put their tails between their legs and rolled over to the authorities. Just at the point where Roger Hallam's plan required them to imitate the Children's Crusade and start busing wave after wave of children to the front lines, XR folded.
And where was Roger?
In a spectacular example of bad timing, Roger Hallam himself was sitting on remand in jail because of the drone stunt at Heathrow. During the autumn rebellion in 2019, he appeared via video-link before the Isleworth Crown Court from Wormwood Scrubs prison. He was accused of conspiring to cause a "public nuisance between August 1 and September 14", namely conspiring with others to fly drones near Heathrow airport "in order to cause widespread disruption."
Reports said, "the XR co-founder entered no plea and a trial date of February 17, 2020 was set."
Although in the meantime he still somehow managed to strike a worldwide book deal from his jail cell. He intended to publish his 80-page pamphlet, inspired by the 18th-century pamphleteer, Thomas Paine, called "Common Sense for the 21st Century - *ONLY NONVIOLENT REBELLION CAN NOW STOP CLIMATE BREAKDOWN AND SOCIAL COLLAPSE*."
Perhaps that's what he meant by prison being a book club. The police warned XR in the press that prison was not a "yoga retreat", but perhaps he thought it could be used as a writers club where authors got three square meals a day and lodging for free. Either way, although XR was notionally supposed to be "leaderless", I can't imagine having its de-facto leader AWOL during the autumn rebellion did XR much good.
Then the rebellion turned into a fiasco in Canning Town tube station. "Rebels" voted not to blockade the tube, but a few renegades decided to go ahead anyway in spite of the majority decision. They got on top of a tube train at Canning Town Station in East London with a big banner saying "Business as Usual=Death" and tried to delay rush-hour commuters. But things got ugly, they got pelted with food, and some of the commuters climbed on the train to get the protestors down. One of the protestors tried to defend himself by kicking a commuter in the shoulder. The result was that he got dragged off the roof of the train and got kicked and beaten by the frustrated crowd. Of course it was all on film (one of the XR camera people also got beaten up) and the Conservative media had a field day.
The final straw was Mr. Broccoli.
Piers Morgan interviewed one of the XR protestors on the British television network ITV. On *Good Morning Britain*, with close to a million viewers, Mr. Broccoli came on the show dressed as a head of broccoli. In the bizarre interview, Morgan tore Mr.

Broccoli's credibility to shreds and showed he didn't have a clue about climate science or the veganism he was advocating. He made XR and climate activists seem like the laughing stock. The whole thing went viral. Then the tabloids doxxed Mr. Broccoli and lambasted him as a hypocrite, because it turned out he was a commercial driver and drove thousands of miles a year in a diesel van.

As 2019 drew to a close, we had what Brits call an "Indian Summer" in the Ionian. Often, after a spell of unsettled weather at the end of the season in September, there is a period of glorious sunshine, warmth and cloudless skies. It was like that in October as the island of Agios Nikolaos closed down for the winter. It was truly marvelous. In order to try and save money, I extended my cruising as long as I could before taking refuge from the winter storms in a marina in Preveza. I spent the winter there writing the book you are reading now.

George closed up shop at the end of October. I met him on his last day and said goodbye. He said he was going to spend the winter in Athens. He asked for my number and asked if he could call me and bug me with questions about Climate change. I said I would love to tell him all I know. "It's a sailor's favorite subject," I said.

It went largely unnoticed, but in July that year, the hottest July ever recorded, in the warmest year on record up till that point, Greenland lost a massive 11.3 billion tons of ice in one day. One scientist noted that the amount of ice lost could cover the state of Florida in 12 cm of water, or the whole of Germany in 7 cm. The ice sheet that covers Greenland has enough ice to raise sea level across the globe by more than 7.2 meters. The Danish Meteorological Institute said that in total, Greenland's ice sheet lost nearly 200 billion tons of ice in July 2019 alone. According to the prevailing climate models, that kind of ice loss was only supposed to happen in 2070.

And the world hardly cared.

But Dean and I noticed, because we were watching the news intently.

The other thing that caught our attention were the methane fountains discovered on the East Siberian Arctic Shelf (ESAS). Dean texted me a link to the news article.

"Waddya think?" he wrote.

"It happening bro," I texted back.

The headline was, "*Russian scientists find 'most powerful' ever methane seep in Arctic Ocean.*"

The "seep", as methane fountains are called, was discovered east of Bennett Island in the East Siberian Sea. The water was said to "boil" with methane over an area of 15 square meters. The next day another seep of about the same size was found nearby.

A scientific team, led by Igor Semiletov from Tomsk Polytechnic University, on the Russian scientific research vessel *Akademik Mstislav Keldysh*, made the discovery. You probably know the ship from James Cameron's 1997 movie, *Titanic.* In the modern day scenes in the movie, the white research vessel was the same *Keldysh.* It was actually used in real life to make numerous expeditions to the Titanic, so life imitated art in Cameron's docu-drama.

The "climate catastrophe blogosphere" was quick to pick up the *Keldysh* story. And, predictably, just as quick were the *kewl*, *kleva, Konservative* "debunkers" with their sage and *eva-so-kleva* articles about "dialing back the methane hysteria".
What all the fuss was about was that, as a greenhouse gas (GHG), methane (CH_4) is something like 86 times more potent than CO_2 over a twenty-year time period. Over a hundred years it's atmospheric heating potential is still a whopping 34 times as great as CO_2. It lasts in high concentrations in the atmosphere for about 9 to 12 years. During that time CH_4, gradually transforms into CO_2 through a process of chemical oxidation in the upper atmosphere. And once transformed into CO_2, which is still a potent greenhouse gas, it stays around in that form for centuries.
There have been large spikes of CO_2 in the geological record, which scientists suspect to be methane spikes, but can't really prove it because the methane disappears quickly without a trace (and becomes CO_2). So there's no "smoking gun".
The trouble is, those spikes are associated with mass extinction events, such as the Permian–Triassic extinction (colloquially known as the *Great Dying*).
Approximately 252 million years ago, 96% of all marine species and 70% of all terrestrial vertebrates went extinct in that event.
Although CO_2 emissions into the atmosphere got all the press, methane generally got scant attention aside from the occasional mention in association with permafrost melt and cow farts (although cows actually belch methane, rather than fart it). Yet methane had frightening potential to cause catastrophic and *abrupt* climate change, rather than the gradual, slowly creeping change that the public usually imagined when they thought of a climate crisis.
The most severe threats were from the shallow waters off the Arctic coasts, particularly the continental shelf around Russia - the ESAS. The ESAS is the largest continental shelf on earth. It covers more than two million square kilometers, which makes it bigger than Germany, France, Great Britain, Italy, and Japan combined. And the average depth is only about 58 meters, which makes it so shallow that most of its vast floor is theoretically even accessible to a recreational scuba diver. The vast expanse of the ESAS contains sedimentary basins full of organic carbon in the form of methane hydrates, or what's called *clathrates*, to an *estimated depth of 15 km*!
Clathrates are ice-like compounds formed when water freezes and traps CH_4 and other gases within the water molecule lattice, which just happens to be the perfect shape to contain a molecule of CH_4.
I first came across clathrates when I was a kid in an article in the Sunday newspapers in the popular "*Ripley's Believe it or Not!"* section. It was billed under the heading "Ice that burns!" The sensational claim was that there was naturally occurring ice that you could hold a match to and ignite. You could actually watch a chunk of the ice (in the form of clathrates) burn down to a puddle of water right before your eyes.
Shallow clathrate deposits were predicted to occupy about 57% of the vast expanse of the ESAS seabed, and they have been sitting there undisturbed from before the last Ice Age. A thin layer of permafrost capped them, but as the Arctic warmed up due to global heating, the permafrost cap was beginning to melt. Since the cap on the 15 km deep clathrate deposits was often only a few meters thick, there was not very much of a seal on a bottled up global catastrophe-in-the-making.

Prof. Peter Wadhams, an observational scientist who led at least forty polar expeditions to study the Arctic ice, was one of those who voiced the concern that a general release or pulse of methane from those trapped sediments could cause a very rapid rise in global average temperatures – something like 0.6 degrees Celsius in five years. But there was a growing body of people around the world that were starting to worry about a far more catastrophic scenario: *runaway climate change from a sudden 50-100 gigaton release, or burp, from clathrate deposits in the Arctic*. Which could potentially cause an abrupt and devastating temperature rise of up to 6 degrees Celsius, just as happened in Permian mass extinction. Which could happen in a matter of weeks.

This was known as the "Clathrate gun hypothesis", or more colloquially as the "Methane Dragon".

Of course Internet sites with names like "The Doomsday Debunkers" etc. boldly asserted that this hypothesis had been "effectively disproved". The proud "debunking" was based almost entirely on a single "major literature review" by the U.S. Geological Survey (USGS) *Gas Hydrates Project* conducted in 2017. Not to be too conspiratorial, but I feel I should point out that the Gas Hydrates Project's primary mission was to "evaluate methane hydrates as a potential energy source." So read their motives for downplaying it any way you like.

Strangely, Carolyn Ruppel, the leader of the Gas Hydrate Project, appeared in a YouTube video in February 2019 and said about the Methane Dragon: "This is a problem when we try to produce methane from hydrates. It just keeps shutting itself down. Right? So it's not a situation where we trigger breakdown and that breakdown is going to suddenly … the whole deposit's going to release all it's methane all of a sudden. That is not a scientifically sound worry."

The video originated from Yale University and had a number of serious factual inaccuracies. For example, that the ESAS was over 150 meters deep (when in actual fact it's about half that depth). Ruppel concluded that was deep enough to keep clathrate deposits intact due to water pressure (whereas the opposite was true at the actual depth) and it was deep enough for methane seeps to be absorbed in the sea before they reached the surface (which was not the case in the ESAS). Strangest of all, she claimed that melting clathrates was an "endothermic reaction" (i.e. a chemical reaction that required heat) when in actual fact it was simply the same process as melting ice – a basic high-school level physics mistake.

In 2018, the CAGE research group made a much more assertive claim that "methane clathrates formed over 6 million years ago and have been slowly releasing methane for 2 million years independent of warm or cold climate, rather than releasing methane only recently as had previously been thought."

In 2019, the Intergovernmental Panel on Climate Change (IPCC) at the United Nations came to a similar conclusion in their *Special Report on the Ocean and Cryosphere in a Changing Climate*. Which flew directly in the face of what observational scientists in the Arctic, like Igor Semiletov on the *Keldysh*, were reporting.

When Semiletov's team reported their discovery of two sites east of Bennett Island with methane fountains 15 meters wide, the *eva-so-kleva* brigade piled scorn on the report, because according to their logic, 15 square meters was "pathetic" and

"nothing", and, as all "sensible people" already knew, methane has been slowly seeping out for 2 million years without any discernable effect (just as the CAGE report had pontificated). So there was nothing to worry about.
Except Dean and I knew that a joint Russian-American research team had previously gone to the same spot near Bennett Island specifically to look for plumes of methane way back in 1992 and found nothing.
During the Cold War, in the 1970s and 80s, American atmospheric scientists reviewing satellite pictures of Bennett Island noticed an intriguing phenomenon. For short periods, large smoky plumes could be seen streaming away from just one side of Bennett Island, stretching out for hundreds of kilometers. For twenty years the phenomenon was a puzzle. The theories were that it was either some kind of clandestine military operation or else frozen clathrates were bubbling up from the sea floor. Bennett Island was off limits to Westerners until the Cold War ended. Then, in 1992, in what was called "The Bennett Island Project", American scientists flew to the tiny island to study the plumes on a Russian aircraft stationed at Cherskiy on the northeast coast of Siberia. What they discovered, through careful monitoring, was that the plumes were actually nothing but naturally occurring clouds at an elevation of about 10,000 feet. When arctic winds blew from the southeast the island formed an obstacle, something like a ski-ramp, which forced moist air up to a point where it condensed into ice-crystals, forming what appeared to be long plumes of smoke.
The point was, after flying extensively over the region with an aircraft specifically modified to detect atmospheric methane, they couldn't find any. And yet in the same spot, almost three decades later, the *Keldysh* found two seeps that scientists said were "boiling" with methane bubbles which could be "scooped up with buckets". The air in the vicinity registered a methane concentration of about 16 ppm, which was the highest reading ever registered for a methane seep at sea. Which was strange, considering that methane had supposedly been harmlessly bubbling up from the seabed for two million years!
And if 15 square meter fountains were not big enough to impress the naysayers, it should be noted that back in 2011, the UK's *Independent* reported that the same Igor Semiletov and his team had just discovered "vast methane plumes" in the ESAS. In the article he was quoted as saying, "Earlier we found torch-like structures like this but they were only tens of meters in diameter. This is the first time that we've found continuous, powerful and impressive seeping structures *more than 1,000 meters in diameter*. It's amazing."
Semiletov's team published a study in 2010 estimating that the methane emissions from the area they visited were about 8 million tons per year, but their latest discovery, reported by the *Independent* in 2011, suggested that they had significantly underestimated the true scale of the phenomenon.
He said. "We carried out checks at about 115 stationary points and discovered methane fields of a fantastic scale – I think on a scale not seen before. Some plumes were a kilometer or more wide and the emissions went directly into the atmosphere – the concentration was a hundred times higher than normal."
Dr Semiletov released his findings that year for the first time at the American Geophysical Union meeting in San Francisco.

A year later, a celebrated YouTube video was made of an informal discussion with a scientist from the University of Alaska, Natalia Shakhova, during the European Geosciences Union General Assembly in Vienna. In it she talked about the clathrates in the ESAS and said they are the largest hydrocarbon stock in the world. She said that the only thing dividing the methane deposits from the atmosphere was just a very shallow column of water and a weakening permafrost layer, which was losing its ability to serve as a seal due to anthropogenic global heating. She claimed that if just 1% of the clathrates vented into the atmosphere, it would increase the global methane concentration by about three or four times. In the video she said that such an event was likely, not in a matter of thousands of years, or even hundreds, but only decades. And then from off camera you could hear Igor Semiletov correcting her and saying, "I believe it will happened at any time."

Shakova explains in the video that Semiletov is saying that because the ESAS is very "seismically and tectonically active".

Then she backtracks and says, "…not any time. Anytime sounds like it might happen today, it might happen tomorrow, the day after tomorrow…"

"It might," insists Semiletov, still off camera.

Shakova then expands on the many reasons why Semiletov is so convinced. Visibly tearing up, she says, "… this is what makes him think the worst thing may happen."

Then she pulls herself together and says emphatically, "Shortly speaking, we do not like what we see there. Absolutely DO-NOT-LIKE."

Then the video ends.

That video was uploaded in 2013. If life were a disaster movie, that video could be the clichéd scene where the concerned scientist warns the world of the impending disaster but no one heeds the warning. But take your pick, it could just as well be James Hansen testifying to Congress about the dangers of global warming in 1988.

Three decades after Hansen's warning, in 2019, Shakova, Semiletov and Chuvilin published a paper in *Geosciences* entitled "Understanding the Permafrost–Hydrate System and Associated Methane Releases in the East Siberian Arctic Shelf".

In it they estimated that more than 800 billion tons (800 gigatons) of CH_4 was lurking under the ESAS. They wrote, "This amount of pre-formed gas preserved in the ESAS suggests a potential for possible massive/abrupt release of CH_4, whether from destabilizing hydrates or from free gas accumulations beneath permafrost; such a release requires only a trigger."

They concluded that to assess whether sudden, large scale CH_4 releases where likely in the future, monitoring of the entire area of the ESAS was "of critical importance".

That same year Republican Governor, Mike Dunleavy, substantially slashed the budget of the University of Alaska, Shakova's employer.

As noted in their paper, for the previous two decades they were still the *only* scientific team continually investigating methane emissions in the ESAS. Even though they alerted the scientific community to the potentially catastrophic danger more than ten years before.

Incidentally, mentioning the Russian scientific research vessel *Keldysh* and its appearance in the *Titanic* movie reminds me of another connection to the real *RMS Titanic*. Bob Ballard, who originally located the actual wreck of the *Titanic*, was reported in 2016 as finding 500 new methane seeps off the West Coast of the US.

The discoveries supposedly doubled the number of vents known to exist along the continental margins of America. "It appears that the entire coast off Washington, Oregon and California is a giant methane seep," said Ballard.
Marine sediments all over the world contain huge amounts of clathrates. Since clathrate deposits were estimated to be at around 10,000 billion tons, they far exceeded other known fossil energy sources, like coal, oil, and other natural gas. Clathrates need high pressures and/or low temperatures to exist. So if the permafrost was melting in low-pressure areas, it was reasonable to assume that would result in abrupt gigaton outbursts. Whether you thought there was cause for alarm or not apparently depended on how emotionally depressed you were at the time and how disillusioned you were with industrial civilization. If you were a technophile, politician or economist, then there was apparently nothing to worry about.
Agios Nikolaos might seem a blissfully long way from the Arctic, but then to most people *everywhere* was a very long way from the Arctic. And global climate dynamics were very abstract, even to people in XR who thought they were "super woke" to climate change.
So I was somewhat surprised when George phoned me up one day in tears. He said he was depressed and spending all his time watching videos about Climate change on the Internet. Evidently he had just gone down the Doomerism rabbit hole by watching too many videos about the Methane Dragon and the Blue Ocean Event (BOE). He said the more depressed he got the less anyone would listen. He thought he was losing his mind. He had no one to talk to about it, except his daughter Anna and Antonis, and they were in college and so he didn't see them very much. His wife wouldn't listen to him and his friends were indifferent about Climate change.
I told him that he was just going through the usual grieving process. "Everyone goes through that at first", I told him. "You are going through the Five Stages of Grief. At some point, everyone on the planet will eventually have to do it."
Of course there are not *really* five stages of grief. Chronic grief is really just like a washing machine of circling emotions you never come out of. Swiss-American psychiatrist Elisabeth Kübler-Ross invented the five stages of grief theory in her book *On Death and Dying* in the late Sixties. Although her model stuck in the popular imagination, she came to regret that it was too linear and chronologically neat. Not to mention that it had no empirical support. Still, it's nice to think of something like catastrophic loss as being an orderly and predictable progression: *denial, anger, bargaining, depression and acceptance*. It's a delusion, but it so nicely encapsulates and controls our dread that we find it hard to resist – at least when it comes to commoditizing and distancing yourself from other people's grief. The theory basically says to us, "they're on the skids, but soon they'll settle down."
I told George that it was not worth watching all the disaster porn. Once you realize we are all screwed you just have to try and make the most of your life. That was my usual shtick in this situation. "Remember, George," I said, cringing at my own patronizing tone, "You are a philosopher, and as a philosopher, you must surely know that everything is impermanent."
"I do," said George. "I just didn't know it was so fucked up."
And so that's how George wound up calling Anna, to sign him up as a member of XR.

I wasn't really sure if he knew what he was doing. To me XR just seemed like a bunch of over-privileged liberals with eco-anxiety whining about the loss of their future standard of living. I didn't think the movement would amount to much, because eco-anxiety is an itch too easily scratched simply by sitting hand-in-hand with like-minded pseudo-"rebels" in Trafalgar Square singing Kumbaya or whatever. But George, perhaps encouraged by Anna and Antonis, seemed to think it was the start of a genuine rebellion – something like the resistance against the Occupation powers on Crete during World War II.

He couldn't seem to comprehend why XR was avowedly non-violent in the light of such a huge, impending ecological disaster. I guess it didn't help that I said, "George, heroes fight like Greeks, but liberals fight like Gandhis. In my view, it's just about depressed narcissists trying to make themselves feel better. It's vacuous."

I explained to him that if XR achieved anything at all it would just be to provide justification to the British government to start implementing a Green New Deal (or what Dean always called, "A Greed New Deal"). And if you look at the gigantic carbon footprint of the Roosevelt New Deal that inspired it, it would be ecocidal to even consider emitting that much CO_2 into the atmosphere.

I said that whatever XR did it probably wasn't that important anyway. At that time one of the most important events in relation to Climate change was arguably the protests going on in Hong Kong.

Those protests weren't specifically about so-called "climate action", but at that time it looked to me like their outcome would have more impact on the Cclimate crisis than anything XR could ever dream up. At least in terms of climate change activism, anyway. The reason was that no matter how much eco-anxiety ridden liberals in rich Western countries wrung their hands about the looming climate catastrophe, in truth the fate of humanity realistically rested almost entirely with China and it's economic policies. That's because in 2019 Beijing announced that, in spite of its excessive and highly successful greenwash PR campaign, China didn't intend to start addressing its greenhouse gas emissions before 2030. Until then it was full steam ahead with President Xi Jinping's eco-genocidal Belt and Road Initiative (BRI).

China was already by far the world's biggest carbon polluter. It was clear to any serious observer that if China went ahead with Belt and Road, then humanity's fate would be sealed. In the next decade, in the name of the BRI, China intended to spend $26 trillion in infrastructure development in 65 countries. Those 65 countries represented 4.4 billion people – roughly 62% of the world's population. The problem was, the high standard of living of Americans and Europeans had already stretched the carrying capacity of the whole planet beyond its limit. By some estimates, the US alone was consuming 2.5 planet's worth of annual resources in 2020. Both the standard of living and the carbon footprint of the average Chinese person was about half that of an American, but China had four times as many people. Bringing their standard of living on par with the US (which is what President Xi intended to do by 2030) meant that China and America would together be consuming about 12.5 *earth-sized planets every year!*

So anything XR, or anyone else, achieved outside of those two countries paled into insignificance. And in 2019, when Xi announced no restraints on GHG emissions

until 2030, neither XR nor any other environmental activists had much presence in either the US or China.

China's vast neocolonial expansion plan, BRI, was intended to finance a breathtaking miracle of planetary destruction. Just like previous imperial colonialists, China planned to use debt-trap diplomacy to forge its new empire. Basically it meant that China was making deals with corrupt heads of government in BRI countries whereby the gigantic infrastructure for the "New Silk Roads" was paid for by loans from the Chinese Development Bank (CDB). If any neocolonial country fell behind on loan repayments (a near certainty), then China had the right to seize ownership of the asset being developed. And it also had the means to do it because part of the deal was that all the projects were built and run by Chinese laborers. So taking physical control amounted to not much more than a paper shuffle.

Of course the colonial citizens would hardly get to see a penny of all this wealth, or rather *wealth extraction*. For example, in Africa, Chinese farm laborers worked vast tracts of land to provide a breadbasket (or rice bowl?) to feed China, and BRI initiatives like networks of roads and railways took the food out of Africa through renovated ports paid for with loans from China. But few Africans, other than corrupt officials, were involved. Africa was being pillaged on a vast scale by a foreign colonial power for the second time, but hardly anyone quibbled because it was sold as "investment", "development" and "economic growth". At that time in history, to paraphrase Gordon Gekko, "*growth* was good, *growth* was right, *growth* liberated people."

One could almost say *growth was worshipped – fetishized even*.

If China had carried on with BRI, that would have soon put the world on a 2.7-degree heating path, which would be catastrophic. So why do it?

Well the way Dean explained it (and he knew about these things), was that, like all world leaders at that time, Xi was trapped. The unwritten social contract of China's Communist (or rather, state-capitalist) government was that private citizens stayed out of politics, and in exchange, the authoritarian leadership would deliver endless prosperity and hyperbolic economic growth. Buying off the population with economic growth would obviously have dire consequences for the ecology and climate stability of the whole planet further down the road. But the near term consequences of an economic slowdown threatened to be equally devastating for China. So Xi Jinping was trapped, just like almost every other world leader. So they sold a nostrum of hope and a Whiggish optimism that "market-led solutions" would shower economic abundance on the world and make all the environmental problems go away. The problem was, relying on market forces and techno-magic meant that the global economy had to be intact. In the insane words of one economist, "We need a robust and healthy economy so that we have the money to spend on saving the ecology."

Unfortunately the very thing that was destroying the ecology – the economy – was at the breaking point. Yet few people in the Anglosphere noticed, because America was distracted by the Trump Show and in Britain everyone was fixated by Brexit.

Cp. 4. Brexit and a COP out

On a number of occasions in 2019 I had sat over a beer in the pseudo-English pub on *Ag. Nik.* called *The George* and chatted to Brits about Brexit. There was a faction that was very pro-Brexit, led by a semi-retired old codger called Kevin with a markedly hooked nose and tanned face. Kevin was once in the military – "ex-para" as they called him. It turned out that many of his cohorts were in the British Parachute Regiment and had served under his command. Such was their loyalty and devotion to him that they followed him to Greece in his retirement. This group was basically made up of xenophobes nostalgic for Maggie Thatcher, and they dreamed of an autonomous Britain with strong borders. I found these "Little Englanders" were remarkably sanguine about what would happen to them after Brexit. Most of them were retired liveaboard couples luxuriating in Greece on rental income from the UK. It seemed to me that half of Britain must have been renting from the other half – the older generation parasitic on the younger people.

"Aren't you concerned what will happen to you after Brexit?" I asked. "Maybe the EU will repatriate you to Britain, or you might be subject to Schengen, in which case you will only be allowed to stay in the EU for three months at a time and then have to be away for three months."

"Nah, we'll be fine," they assured me. "There are just too many Brits in Europe. They'll need us here."

"But what if the UK stops paying pensions or social security unless you are in Britain?"

"They can't do that," I was assured, "because then hundreds and thousands of people would stream back to the UK and the system couldn't cope."

"I can foresee a situation where the Pound falls, and the government can't afford to send money abroad, or if it does, it won't be enough to live on," I said.

They were convinced that if the Pound fell it would make Britain more competitive and mean that exports would increase.

I was thinking to myself, "Exports of what? Britain's only export is banker's credit and the financial firms are already re-locating to Frankfurt in anticipation of Brexit."

Kevin and his cohorts were delighted when Boris Johnson served up the largest Tory majority in the Commons since Maggie Thatcher in the general election held on 12 December. Three years of political paralysis seemed to be over. Personally I thought it would initiate a move towards Scottish independence and the disintegration of Britain, but Kevin and his mates pooh-poohed that idea.

An important outcome of the election was the relatively lackluster result for the Green Party. Although it gained a lot of ground, in the end it only won 2.7% of the vote. Considering it was supposed to be the "climate election", it turned out the British electorate put Brexit way ahead of the Climate emergency.

The Industrial Revolution may have started in Britain, but it didn't look like it was about to end there any time soon. Although concern for the environment was rising in the UK, polls showed that it ranked fourth behind the economy, health and Brexit.

In 2019, to most liberals in western democracies “climate action” simply meant recycling commodities, weatherizing and insulating homes and offices, building renewable energy infrastructure, taxing carbon imports at national borders, and creating the ever-popular panacea of high-paying “green jobs”.
But I highly doubted that the money earned from green jobs would be spent in a green way. Boosting the “green” sector of the economy doesn't work, because the labor force in the “high-paying green jobs” that Left-wing politicians love to crow about, simply spend most of their wages in the carbon-emitting sector of the economy.
Carbon taxes notwithstanding, I could foresee that increasing economic activity would raise the standard of living of rich westerners still further, which would just increase the burden of extraction and emissions on the planet. “Green growth” was still growth.
After the failure of the “October rebellion” and resounding defeat in the “Climate election” the environmental movement was at a low ebb.
To add to their misery, the UN Conference of the Parties (COP) for the United Nations Framework Convention on Climate Change was a disaster. COP25 was supposed to happen in Brazil in November. Brazil’s president, Jair Bolsonaro, a right-wing Climate change skeptic, reneged on hosting the UN climate talks as soon as he was elected. Chile then volunteered to host the COP, but in late October withdrew the offer because of civil protests raging throughout the country.
Finally Spain offered to host the summit and it was held in Madrid. It ended in failure on 15 December as delegates from nearly 200 countries struggled to reach agreement on key issues underlying the Paris climate deal.
Bolsonaro scorned the event as a “commercial game.” It was hard to disagree with him, because the “loss and damage” principle, in which poorer countries clamored for climate change handouts from rich countries, fell apart in an embarrassing shambles.
All the COP really achieved was to underscore the “let them eat cake” attitude of the wealthy countries causing most of the environmental degradation. Brazil, the world’s biggest beef exporter, was slashing the Amazonian rainforest so that cattle farmers could feed their herds and export beef to the meat-eating rich – the same rich who were protesting the destruction of the Amazon. Pouring on the derision, Bolsonaro said, "I'd like to know: has there been a resolution for Europe to be reforested, or are they just going to keep bothering Brazil?"
XR seemed to be in disarray too. Greta Thunberg got flamed for saying world leaders should be put up “against the wall” at a COP climate protest. Sixteen year-old Greta was named *Time’s* youngest ever Person of the Year, which triggered Trump to Tweet: “So ridiculous. Greta must work on her Anger Management problem, then go to a good old-fashioned movie with a friend! Chill Greta, Chill!” She finally bowed out saying, “I will be home for Christmas and then I will take a holiday break because you need to take rest. Otherwise you cannot do this all the time.”
While this media circus was going on, the Clathrate bomb in the Arctic was ticking away, and Warren Buffett's “financial weapons of mass destruction” – the financial

derivatives market – was also about to detonate. The global derivatives market was about $1.2 *quadrillion*, or about 20 times the size of the world economy.

At the end of 2019 Wall Street was starting to get worried that a big bank was about to fail. According to US banking regulations, banks had to maintain a minimum reserve overnight as a ratio of their financial exposure. Normally, banks with a surplus reserve would lend to banks with a deficit (at the overnight rate set by the Federal Reserve Bank). But if a bank couldn't find anyone willing to risk extending it an overnight loan, then it had to do the walk of shame to borrow the money from the Fed. Someone, who the market assumed was either Deutsche Bank or J. P. Morgan Chase, was doing the walk of shame every night to the extent that the Fed had to start a bond-buying spree of $60 billion a month. In addition, there were also occasional hiccups, like the time the overnight rate spiked from 2% to 10% almost instantaneously. Such a thing was unprecedented. If a major bank was in trouble, then it would probably have to declare bankruptcy when it closed it's books at the end of 2019, or else it would need a federal bailout.

And that's pretty much what happened, in secret. Essentially it was accounting fraud. On the last day of the fiscal year the Fed "loaned" out cash so that all the major banks could pass their federally mandated "means testing."

After the financial crisis in 2008, Senator Bernie Sanders forced an amendment to the Dodd-Frank financial reform bill to make the General Accountability Office audit these scam loans by the Fed. That was to prevent the New York Fed repeating how it secretly loaned out $29 *trillion* to keep Wall Street afloat during the 2008 crisis. It took many years of court battles to expose what the Fed had done, but by then the public was no longer interested.

The public was blissfully unconcerned that most of this activity was done to keep a criminal organization, called JP Morgan Chase, running. The criminal running the show, Chairman and CEO, Jamie Dimon said, "The term 'too big to fail' must be excised from our vocabulary."

But obviously not just yet.

JP Morgan Chase pled guilty to two criminal felony counts for its role in the Bernie Madoff Ponzi scheme. In 2015 it pled guilty to a felony count for rigging foreign exchange markets. In 2019 its precious metals traders were sent to jail for long prison terms for racketeering and conspiracy. Over the years this one bank, the largest commercial bank in the US, had paid billions in fines and settlements.

At the end of 2019, the Fed secretly bailed out this criminal enterprise once again, and got round disclosing it to the public with financial sleight of hand. They could get away with this for two reasons. First, they could manufacture unlimited amounts of money out of thin air ever since the US came off the gold standard in 1971. And second, they evaded censure because the public was generally ignorant and oblivious to how all of this would affect their lives later.

Most people thought that the crisis had been averted in 2008. In actual fact it had just been swept under the rug with false accounting. What had happened was the $1.2 quadrillion in the global derivatives market became worthless almost overnight due to the "sub-prime" loan crisis ("sub-prime" was a euphemism for the euphemism "people of color"). That meant that almost all the world's financial

institutions were suddenly bankrupt at a stroke. The way out of the mess in 2008 was to simply lie.

The government suspended Financial Accounting Standard 157 (FAS 157) rule C, which said that bookkeepers had to account for derivative assets based on their market value. Since there was effectively no market after the crash of 2008, the Financial Accounting Standards Board (FASB) dictated that FAS 157 was nullified, and instead of using "mark-to-market" accounting rules, they were free to use any "reasonable accounting" measure.

Being conservative by nature, most accountants simply declared worthless assets were worth what the institution concerned originally paid for them. This "mark-to-model" accounting let banks paint a rosy picture of their financial condition and allowed them to stay in business by fraud. The problem was that investors could no longer value banks with any accuracy. As investor Warren Buffett pointed out, it was all "mark-to-myth."

Such is the bravado of bankers, once the crisis was patched up this way, then they soon came out of the woodwork to say that the crisis was caused by the bean counters! Since FAS 157 only came out in 2006 (two years before the crisis), they claimed that it wasn't their predatory lending practices and the meltdown of the subprime loan market that caused the crisis, but rather the fact that *they had to account for it*. So it wasn't really their crimes that were the problem, it was the fact that the government forced them to *account for their crimes*!

After 2008, accepting its mistake, the government said that Wall Street no longer had to do proper accounting for its criminal activity and predatory lending. That unleashed a monster of "moral hazard" that no one knew how to contain.

In the wake of 2008, the Fed got into a quagmire of having to bail out Wall Street again and again, like it was a deadbeat, alcoholic uncle. By the end of 2019, it got so bad that banks were deliberately driving themselves down the toilet to increase the windfall from a Fed bailout. And the US taxpayers, who were being saddled with bailout debt, were all out to lunch watching the Trump Circus.

Where would it all end?

Without realizing it, the Capitalist (and State-capitalist) world was actually following in the footsteps of the Communist world when it collapsed in the Soviet Union. The Soviets idolized agricultural and industrial production. So when the Soviet Union began to implode, they began deliberate false accounting for both of those to bluff their way back to a stability that never came. Production quotas were met using fraud, and set using fantasy. The standing joke with the Soviet worker was, "we pretend to work, and they pretend to pay us." Hyper-normalized fantasy was brought down to earth with a bump when products ran out on the shelves in supermarkets.

A similar thing was happening in the West. In 2019 the US economy was supposed to be booming. Yet it was all based on bluff and false accounting. The housing and stock markets were inflated by tinsel from the Fed. Wages were stagnant, and workers were underemployed and often working multiple jobs to make ends meet, but officially unemployment was at record lows. The economy was in a deflationary spiral, because consumers were at the limit of their credit and no one could afford more "stuff". So the average Joe paid the price in self-esteem, because people

couldn't quite work out why they were struggling so hard when the economy was supposed to be so good.
In the West, the hammer part of the hammer and sickle had long been exported to the Far East. There was still the sickle part of the economy in the US, but it only employed 1.3 percent of the population on farms. Back in 1870, almost 50 percent of the population was employed in agriculture.
The vast majority of people in the US were being underpaid and overworked in what David Graeber called "bullshit jobs", or what economists called "the service economy."
While the Soviets valued industrial and agricultural production above all else, the Capitalist system value the markets above all – especially the financial markets. So when the Soviet system was crumbling, the government tried to prop up production. Now that the Capitalist system was crumbling, the governments tried to prop up the markets. Value in the stock market was hollowed out by corporate share buy-backs of their own stock using almost free money. Essentially it was legalized fraud.
There were no price signals; no accountability. Even the gold and precious metals markets were being manipulated.
The more money the Fed pumped into the system to protect the trading houses and banks, the more money the super-rich siphoned off. And the more hard-pressed the average laborer and consumer became.
The system was driving itself headlong towards neo-feudalism with bottomless QE.
The world was starting to seriously question neoliberalism, but the institutions of neoliberalism – the World Bank, the IMF, the BIS and the WTO – where too powerful and entrenched to disappear. The financial Frankenstein was proving more powerful than the liberal democracies that created it. What 2008 proved was that the people served the financial system, rather than the other way round.
No single country could deal with the excesses of neoliberal institutions because they couldn't afford the risk of capital flight. The extraordinary truth was that, even as the capitalist system was crumbling, no one dared face it down, because everyone was a slave to capital. Unearned income, or profiting without producing, was the only way to make a profit, because China was causing a deflationary spiral in the value of manufactured goods due to a production glut.
Insiders knew that there was a breaking point, but the long awaited financial crash never seemed to come. The reason was that it had already happened back in 2008. The system was just running in mid air, waiting for reality to assert itself.
Modern Monetary Theorists were even saying that the Ponzi scheme was infinite and never had to end. Nothing was real anymore.
In a post-truth world, with false accounting, fake news, phony money, and a crumbling planet, how was reality finally going to call things to account?
Reality had to reassert itself somehow, but no one really seemed to know how. It turned out that things finally came to a head with a food crisis. They could fake everything except food production. They could even fake energy supplies using fracking, but no one could make food magically appear when crops started to fail due to climate change. Even Zimbabwe couldn't print its way out of a famine.
At some point, the eternally hoodwinked masses were bound to react to food shortages. By the end of 2019 there were already signs that was happening. The

cost of food was going up, but government statistics said that the economy was great, because higher food prices meant there was less disposable income for consumers to spend on goods and services, so it appeared there was price stability overall. One foot of the economy was in boiling water, and the other was freezing, but the government said that overall that meant that the outlook was moderate and things were comfortably stable. To economists it all looked rosy, because it all balanced out. But to workers, it felt like they were working harder and longer to earn less, and food prices were going up and they couldn't afford to buy anything. So it was finally protests in the streets that began to break the camel's back.
That made it very hard for commentators in the media to interpret what was going on. To them it was mystifying why civil unrest was breaking out in cities all over the world when the global economy didn't seem to be doing all that badly.
The underlying reality was that it was much like the Arab Spring. The *Gilets Jaunes* protests in Paris were a foretaste of what was about to happen all over the world. It was a case of "immigrants took my job; off shoring took my job; robots took my job; AI took my job; and finally, societal collapse took all the jobs". And yet no one could imagine a world were jobs were no longer necessary or needed.
The themes of the day were "implosion" and "fragmentation". The global economy was entering a deflationary spiral, and the social structures were breaking up. It was a stagflationary bubble economy, and the Fed had no tools to deal with that.
In Britain, after the landslide win for Boris Johnson, he brought his Withdrawal Agreement Bill back to the Commons and it was quickly passed into law. Brexit day was on January 31, 2020.
The British Pound held its value and so conservatives thought Brexit was a triumph and they mocked the prophets of doom. But what they didn't know was that the Pound was being supported by offshore money, most of it illegal or dark money, flooding into Britain now that it was effectively becoming the new Cayman Islands-style tax haven and money laundering hub. Vast sums of money that were squirreled away overseas were repatriated and wound up mainly in the upper end of the property market. The problem was that not much of this wealth got into the hands of the middle and working class. Very little of it wound up on Main Street. So a strong Pound was only a boon for the wealthy, and it hollowed out the economy and the middle-income level of British society.
Although there was a year left for trade talks and a transition period, effectively it was a "no deal" Brexit, because a year was not really enough time to negotiate a comprehensive trade deal with the EU. The much talked about Canada-style trade deal with the EU had actually taken seven years to hash out. So the Elites got the no deal Brexit they wanted while pretending that it was a negotiated exit. And the National Health Service (NHS) was frittered away in a death by a thousand cuts in trade deals with the US.
Multi-national corporations owned Britain even more. Brexit was the gateway to further inequality and an economic caste system of common folk and the untouchable nobility.
Most of the Brits that came sailing in Greece were not the super-rich. For the most part they were sailing enthusiasts who got groups of friends together to share the costs of a charter yacht for their summer holidays. Behind the veneer of the rosy

government statistics, we saw the true picture of the British economy almost immediately in Greece, because the number of tourists coming from the UK dropped sharply the next season.
Greece relied heavily on the tourist trade. *The George* pub was the first economic casualty on Ag. Nik. It had to close, and with its passing the island became even less of a draw for Brits.

Cp. 5. An Unorthodox Easter

In 2020 George insisted that Dean, Barcelona-Anna and I came to his house on Ag. Nik. to celebrate Easter Sunday.

I arrived back on the island during Holy Week. Easter is a big deal in Greece – a much bigger deal than Christmas. Father Chryssavgis held the Midnight Mass for the Resurrection on Holy Saturday. Afterwards there was a festive dinner where the traditional dish, a *Mageiritsa* soup of offal and herbs, was served. At midnight the church bells pealed in Aetolofos as well as in the village at Agios Nikolaos, because some of the Newcomers preferred to celebrate the Resurrection Mass in the Aetolofos church. There were drums and fireworks and people chanted "*Christos Anesti*" (Christ is Risen).

On Easter Sunday I met up with Dean and Anna and we set out to George's house along the road to the *Nikos Beach Bar*. Long ago, George and his family had moved out of the fishing cottage turned taverna and into a large pink mini-mansion with ostentatious gates and statuary in an ornate and rather gauche semi-formal garden. When we arrived we found that there were three whole sheep on rotisseries out on a large paved area, which I found out later some people called "George's Folly". It turned out that George's folly had arisen because, when money was flowing freely back in 2010, he had aspired to put in a swimming pool. At the time it looked like the government was going to lay a freshwater pipeline to Agios Nikolaos from the mainland. In anticipation of having unlimited water, George paved a large swimming area and built a pergola around it, complete with niches containing ostentatious statues of Greek gods. Then the fiscal collapse came and with the austerity measures that followed, the idea for a pipeline was dropped and George's dreams of putting in a swimming pool went with it.

Truth is, without a pipeline the island didn't really have enough water for the regular tourist season. I found out later from Nikos' wife (from the beach bar) that the locals had been washing in bottled water to spare the tourists in the pensions and guesthouses from having water restrictions. The islanders kept the water shortage a secret so as not to concern the tourists, because they depended on them for their livelihood and they didn't want to discourage them or have them suffer any inconvenience.

So thanks to the Greek economic austerity measures, George was left with a large paved courtyard, and a yawning hole that was begging to be a pool. But the upside was that, once he admitted defeat and filled it in, it made a nice area for a party and Easter Sunday was a special party day in Greece.

It seemed like the whole village was there that Easter (Newcomers and all). Some of them were nicely attired, and I regretted not dressing up more smartly. But still, I was considered just a tourist and so no one expected much of me.

Beer and wine were on tap and later in the day many of the guests danced to folk music under the trestles draped with vines. The sky was a boundless blue, the weather was warm, and the day was glorious.

We met George's wife for the first time and she turned out to be a likeable and welcoming middle-aged woman. Her English was faltering and so she didn't stay with us for long after welcoming us to her home.
George greeted each of us with a great bear hug and clasped our hands tightly.
"How've you been, George?" asked Dean.
"Not too well," said George. "I have headaches these days and my eyes are a little …how do you say … *fuzzy*. But it's okay. I'm fine. Come and have a drink and enjoy the fun!"
I went over to look at the two spit-roasted sheep, which were the main attraction. To be honest, they really were a grizzly sight. They had been skinned and put on the spit, but their heads and eyes were still intact, skin dry and taught, and they stared balefully with grinning teeth as they turned. Even their testicles were still attached, all withered and cooked to tiny polyp-like things.
I got a beer and went and sat in some shade with Dean and Barcelona-Anna. Antonis and Greek-Anna came and spoke to us. I asked them how things were going at XR.
"Hmmm…" Antonis winced.
"What's up?"
"They hold themselves back too much," said Antonis. "They are still following Gandhi's non-violent tactics. But I think that to equate Gandhi, the Suffragette movement, and Martin Luther King with the climate emergency is to confuse politics with economics. Transforming the system is all about economics. But XR assumes that it is a political battle."
"What do you think of the Greed New Deal?" asked Dean.
"'Greed' you say? … I see what you mean … but I think it would be nice," said Antonis. "Still, I don't think it's going to happen. Not here in Greece, anyway. Do you like it?"
"I think it will be a disaster," said Dean. "As the saying goes, if you find yourself in a hole, stop digging. I think the Greed New Deal is just an excuse to carry on digging. It's just an economic stimulus package in disguise. There's nothing green about it. On balance a massive building program for 'Green' infrastructure in the name of 'transition' will emit more carbon than the new infrastructure will ever save. It's just liberals trying to jump ship to Fantasy Land. A Greed New Deal is just death by accounting trickery. "
"What do you mean, 'death by accounting trickery'?" asked Anna.
"Well take BECCS for example. BECCS means Bioenergy with Carbon Capture and Storage. The UN has said that the only way to avoid exceeding dangerous global temperatures is not just by reducing CO_2 emissions, but also by *making emissions negative*. That means actually capturing already emitted CO_2 out of the atmosphere and storing it somewhere. But the technology for BECCS doesn't even exist yet. BECCS was just a highly theoretical proposal for Sweden's paper mills to earn carbon credits, but over the years it became a key assumption in the models that the IPCC relied on to avoid dangerous climate change around the globe. Its unlikely BECCS would scale to anything larger than a paper mill. Carbon capture schemes are all really just science-fantasy. So that implies that avoiding climate disaster is also fantasy. And the experimental carbon capture projects that already exist give

you an early idea how carbon capture schemes will fail because of crooked carbon accounting."

Dean gave the example of a showcase carbon capture scheme in America, which had been hailed in the media as a big success. Although he said closer examination reveals that it actually emits far more CO_2 overall than it saves!

For starters, it was made out of steel – vast banks of fans that sucked in huge quantities of air to extract CO_2. For every ton of steel manufactured, two tons of CO_2 are emitted into the atmosphere and there's nothing much that can be done about that. Then the fans had to be powered somehow. In this instance they were powered from the grid by fossil-fuel power stations. So powering the fans caused vastly more GHG to be emitted by the power stations than was actually captured by the fans. But that's not accounted for. And what happened to the "captured" CO_2? Well, Dean said it was pumped into the ground for enhanced oil recovery (EOR). EOR is basically just another name for fracking. So any CO_2 captured simply went to mine tons more fossil fuel! When burned, that oil would produce tons of CO_2 in the atmosphere. So the whole thing was really just an elaborate gas pump for mining oil. The CO_2 pumped underground for fracking percolated to the surface very soon anyway, so almost nothing was sequestered. Yet the scheme was nonetheless eligible for carbon credits, because notionally it was drawing down carbon from the atmosphere!

There was a similar scheme in Europe with the same partial accounting and similar downsides. This time the captured CO_2 was pumped into an agricultural facility nearby. It was ducted into greenhouses to enrich the atmosphere and boost the growth of vegetables by about 30%. But the problem was that any CO_2 not taken up by the plants (i.e. most of it) was simply returned to the atmosphere. That too was not tallied in the overall accounting. So it could only be considered a success due to very blinkered partial accounting. Accounted for more holistically, it was obvious that it would be cheaper and more effective to simply expand the real estate of the greenhouses and grow 30% more vegetables! That would have achieved exactly the same result without the carbon capture scheme (and at hardly any cost). Although then it would not be eligible for carbon credits, and that's where the accounting trickery comes in. It was a perfect demonstration of how a narrow-minded pursuit of carbon credits and government environmental subsidies actually made the environmental situation worse overall.

"Well it's just as I always say," chimed in Barcelona-Anna. "What we should all just be doing is planting trees. Trillions and trillions of trees! The only kind of geo-engineering we should be doing is reforestation."

"That's the popular quick-fix fad of the day, for sure," said Dean, "But it's not quite the cure-all most people think. Every organization in America wants to plant a tree on your behalf now – just so long as you take that flight, consume that product, or donate that dollar! It's just the Consumer-Capitalist Church doing the equivalent of selling late-Medieval indulgences for carbon sin. 'Carbon offsets' is the new way the consumer can buy back their soul and carrying on sinning. But it's not going to do the environment any good in the long run."

Dean explained that tree-planting programs usually do more harm than good. Planting a monoculture of trees in rows like a corn crop (what the silviculturalists in

the US Forest Service call "pines in lines") has just been a gift to forest fires. Perfectly spacing trees for maximum growth dries out peat moss and turns wet peat from a fire retardant into dry kindling. Basically, most reforestation programs amount to just planting enormous stores of combustible fuels. The trees pump the water table dry and then go up in flames. They go from carbon sink to carbon emitter at the first lightning strike. Aggressive tree planting really usually just soaks up groundwater, making forestation programs into desertification initiatives.
"You can't just blindly restore trees," said Dean. "You have to restore entire ecosystems. And that takes time. And time is the thing we just don't have. Like almost everything else in Nature, it's a question of natural regeneration. The best policy by far is to step out of the way and let nature do its thing."
Dean claimed that the human inability to stand back and get out of Nature's way was the major problem. "In the face of Climate crisis the tendency is for people to want to intervene and to act. The greater the crisis, the more they want to help. But what they should be doing is refraining from action and restraining their economic activity. We really should all just be slowing down. Apparently we just can't stop meddling and speeding things up with things like Greed New Deals."
"Yet we can't just sit back and do nothing. There must be something we can do. What about activism?" asked Antonis.
"See? You just can't sit still can you! That's just what I'm talking about," laughed Dean. "Okay, if you really want to do something then think of ways to halt industrial and economic activity. But forget about politicians. Politicians are just there to make sure growth runs smoothly. You'll start seeing politicians initiate programs of de-industrialization, de-growth and eco-restoration when you see water spontaneously start flowing uphill. Truth is, there are no policy changes to demand. There simply isn't enough time left for that. Realistically, the only politicians that matter now are Xi Jinping, Trump, Putin and Mahendra Modi. China is going to need $26 trillion by 2030 to fund its Belt and Road Initiative. That money will come from state banks in China, but a large chunk of it will have to be financed by international investors. If that investment goes ahead it will push earth over a climate tipping point that will seal our fate. So activists should focus on financial dismantling. Anything activists do now that is not focused on attacking world finance and global economics is wasted. The global machine has to be stopped at all costs. But instead of slowing down, we are actually *accelerating* towards the brick wall."
At that point George came over.
"Not drinking?" asked Barcelona-Anna.
"Not today," said George. "So you are talking about Climate change?"
Dean offered to change the subject, but George said he was looking forward to meeting us precisely so that he could talk more about it.
"How long until there is nothing we can do to stop it?" asked George.
"Tipping points? Many people think we are already past some crucial climate tipping points. So we are beyond the point-of-no-return, but in truth no one really knows. Though at this stage my guess is, if we are not actually beyond the point of human agency, we are very close. When you throw in where human psychological acceptance is at the moment, you have to admit that we are all doomed. People are just too far behind the reality of the situation – way too far behind - to change

radically enough to make a difference. It would take a miracle for them to turn around quickly enough. They'll only do that when they really start feeling the pain, and by then it will be way, way, too late."
"How do you think it will play out?" asked Antonis.
Dean said that it was all about the Arctic. The Arctic was warming twice as fast as anywhere else in the world. Measurements were showing that the thawing permafrost in the Arctic was becoming a net source of carbon emissions. The lag on global heating meant that even if all carbon emissions ended immediately the temperatures would still keep rising steeply for one to three decades. It was unclear if the permafrost melt would continue reinforcing the heating trend so that earth's heating would run away with itself – a tipping point – but it already looks like that might be the case. Permafrost melt could already be self-sustaining no matter what anyone did.
Dean said Earth's fate really hinged on what happened to the methane clathrates in the ESAS. At some point there would be a multi-gigaton methane "burst" – the *Methane Dragon* would awaken. At that stage methane would take weeks to months to circulate in the northern hemisphere and temperatures would spike dramatically. Crops would fail shortly afterwards and chaos would ensue.
The Methane Dragon was not dependant upon the BOE. It could be unleashed at any time. After the BOE it would become much more likely. It would only take an earthquake to trigger a major release (and Climate change itself made earthquakes more likely). The chances of a methane burp went up dramatically when the thin cap of permafrost sealing the clathrates under the ESAS melted. That was bound to happen soon after the BOE (i.e. when the Arctic is essentially ice-free in Summer).
"When do you think the BOE will happen?" asked George.
"My guess is that Roger Hallam was right. It could be anywhere between 2022 and 2025," said Dean.
There was silence for a moment as that sank in.
"But why are all the politicians asleep? Why do the scientists say we have ten years to do something or trouble will come in 2100?" asked George.
"They are looking at the parts as if everything is decoupled, and they can't comprehend the whole, so they don't see the true danger. If none of the pieces of the puzzle are immediately catastrophic, then scientists tend to assume that lumped together we have as much time as the first major threat. It's something like the Fallacy of Composition," explained Dean.
Seeing the blank stares on our faces he elaborated.
"Imagine the Earth system is like a gun, and you, as a scientist have never seen a gun before. If I show you a gun and ask if I can kill you from ten paces away, then you would take it apart, examine all the pieces and say, 'no, I'm safe'. Why? Because the stock of the gun wouldn't hurt you if I threw it, the bullets have explosive contents but if they detonated it would be at a safe distance. The lead in the bullets is a pretty harmless projectile etc. etc. Ask the trigger expert and he will tell you it can't kill you. Ask the barrel expert and he will tell you its safe. None of the parts alone can kill you, so you assume you are safe, but that's just because you don't understand how the parts work when you put them all together. The climate and bio-system are like that. Everything is interconnected. Everything is coupled. The methane

released when you plow the soil is the same as the methane released as the tundra melts, but the one re-enforces the other in a giant, self-reinforcing feedback loop. The models don't reflect how everything feeds back into everything else, and if they did, the experts would reject them as useless because they run to infinity quickly and show that collapse will happen soon and abruptly. But it would be career suicide to publish that result, so they ignore it. At least until they retire, then they go out with a single headline of doom that's soon forgotten. Scientists usually assess the threat piecemeal, and anyone who tries to make a meta-analysis of the whole is immediately accused of not having academic rigor or depth of analysis, so they are ignored."

"So they can't see the elephant in front of them through their microscopes, basically," said Barcelona-Anna.

"Exactly. And that bull elephant is angry and about to charge, but they are just monitoring his breath," said Dean.

"There is a demon inside all of us", said George reflectively. "We have unleashed a genie we cannot control. It's going to kill us all. It's the Box of Pandora. The philosophers of Ancient Greece warned us about it."

"I call it the Alien cortex." I said. "It's basically our intellect – our ego. We let it off its leash. It's clever enough to build civilizations and to destabilize the climate, but it's not wise enough to restrain itself."

"Is there really no way to stop it?" asked George.

"As I said, not unless you can stop development in China and India," said Dean.

"How is it that you know more than the scientists?" demanded George.

"Well, I am a scientist. But my job was to do Whole-system Analysis. My job was to model this kind of thing for the US Government, but I was not allowed to publish the results" said Dean.

"Dean has Q clearance," I chipped in. "Its basically the highest security clearance you can get."

"And Hugh here has *honorary Q clearance*," laughed Dean, punching me on the shoulder. "He basically knows everything I know with all my security clearances, but he has none!"

"How?" asked Greek-Anna.

"By drinking with Dean," I smiled.

At this point I better explain to you that one of my pet hobbies was wheedling secret info out of government employees with security clearances. I even did it with the Brits down at "*The George*" pub. Although they were generally very tight-lipped and it was hard getting anything out of them. Though it didn't really matter because they usually didn't know much of the really juicy stuff anyway. The guys with the really fascinating info were Americans, and unlike the Brits they were generally just bursting to share what they knew. Not right out of course, because although the United States does not have a British-style Official Secrets Act, government employees and contractors might be required to just about pledge their life and first born in some nondisclosure agreements for Special Access Programs.

To get round this I developed a kind of drinking game. The government could stop people sharing information, but they couldn't exactly prevent people from taking a drink. So whenever I found willing participants (and there were many!) I would

play this kind of guessing game. I would pose a question, and if I was on the right track, or getting warmer, then my interlocutor would take a sip of their drink. If the answer were a "No", then they would refrain. It was as simple as that. And it was amazing how many people were glad to play along with this game, and even more amazing was the secret stuff I managed to find out this way.

My association with Dean started when I was working as a government contractor in America. Dean had god-like status in a secret branch of the Office of Net Assessment (ONA). The ONA was created in 1973 by Richard Nixon to act as the Pentagon's internal think-tank. Since I had no status at all, and no security clearance whatsoever, it was a strange professional experience for me. I was given assignments in support of work that Dean was doing, but I wasn't permitted to know what that work was.

He was like a kind of oracle with a dedicated staff to serve him, and I was a peripheral member of his supporting staff. After our brief initial introduction, I seldom got to meet Dean. A director and two other assistants would come to me with mini-projects and piecework that spun off from the ultra-secret work that Dean was engaged in. Since I wasn't privy to the details of the project at hand, my assignments were very cryptic to say the least. They would come to me and say things like: "Imagine a Millikan oil drop experiment. Now model what would happen if you had a large oil-drop that was at equilibrium between two charged plates of a capacitor, but spinning at about three thousand RPM, and suddenly you shone a strong light at the drop from the side."

And I would ask questions like, "Okay, is the oil drop transparent or is it highly reflective?"

Then they would say, "Assume it's an idealized black body, completely uniform, that perfectly absorbs all incident electromagnetic radiation."

Then one of them would demur and they would retreat into a corner to have a private conversation. When they came back they might say, "Okay do a model and show what would happen based on all angles of incidence and all absorption levels."

"Okay," I would say. "What radiation frequencies and intensities?"

"Assume it's just sunlight," came the response.

"Right," I said, "So I assume this is a spherical satellite in space that's spinning at high speed? Can I just model it like that? Like a planet?"

I could tell from their body language and facial expressions that I was on the right track. "Okay," said the director. "Just model it like that then, if you like."

It was a bit of a farce at times, because they would often give me what I assumed were bogus assignments just to keep me busy and to throw me off track from guessing what the major line of research was. Once I was told, "This is the scenario: Imagine a major US city with police roadblocks controlling traffic in and out of the city on about 50% of the routes. Now assume you're a drug lord running an illegal dope peddling network downtown. You have no information on where the roadblocks are, but model how many operatives you would need to keep the drug ring supplied, assuming that the drug mules just picked their routes in and out of the city at random. Then model how the drug supply changed if a varying percentage of drug runners got to warn the others about a police roadblock just as they ran into them."

I would do the computer models and then turn them over to more junior software engineers with security clearances, presumably to develop the software further and refine the models for the actual real-world scenario that I could only guess at. I would rarely ever see my programs again after they had been passed on. With all the obfuscation and lack of feedback about my work product I began to get a bit despondent and wondered if I was actually doing a good job or not. After a few months of this I voiced my concerns to the Director.

"Oh no," he laughed. "Believe me, you're doing an absolutely stellar job! You would have been out of here in weeks otherwise. Do you know that you are the only contractor that we have got in that Dean has considered worth keeping longer than a month? He's highly impressed with the job you're doing. Just keep doing it!"

I was somewhat relieved to hear that. And one day it was born out when Dean came to my cubicle unexpectedly one evening and said, "Hey, I'm knocking off shortly. Would you like to go for a beer?"

I could hardly pass up the invitation. From then on, the exceptional treatment Dean gave me elevated my status in the office and gave me high esteem.

Dean kept a highly irregular schedule, seemingly working all hours of the day and night. Increasingly he would invite me to a local pub where we would sit down in the same particular private booth and chat. Inevitably, as time went on, I began to guess the rough outline of the research project Dean was engaged in. As Dean and I became friendlier, I got conformation of my hunches by playing the guessing-and-drinking game.

The main thrust of the project was secret government research into abrupt Climate change as a national security risk.

Dean said, "What catches people out is the non-linear dynamics of Climate change. The IPCC's secret weapon was to present climate change and ecosystem degradation as highly linear and long drawn out. They present these highly misleading smooth graphs all the time. But it's not at all like that. The public has been duped. As I'm sure you already know, complex systems don't normally work like that. Once you perturb a complex system it normally tips over chaotically and abruptly into various failure modes and new regimes. Complex systems, like the earth system, are prone to rapid phase transitions, network effects, exponential feedback and terminal runaway – highly nonlinear outcomes. Most lay people think that Climate 'tipping points' are just scare tactics in the environmentalist media. The amount of people out there who think 'positive feedback' must mean something good – or *positive* – is amazing."

At that time, when it came to Climate change and Eco-destruction, scientists were culturally biased towards erring on the side of least drama. By 2020, they knew that this lack of alarm was rapidly translating into a false sense of complacency in the general pubic. However, they were trapped, because if they presented the true picture, solid psychological research showed that people would simply gave up hope and became apathetic. And when they became pessimistic about the fate of the world, or even nihilistic or fatalistic, then their will to change the cultural norms or force politicians to make policy changes evaporated. Generally, bad news about impending collapse tended to make most people feel helpless and made them focus more on short-term prosperity at the expense of long term survival. The situation

was epitomized by the *Gilet Jaunes,* or yellow jacket, protests that began in France in October 2018. Protestors lambasted President Macron for a pro-environmental tax on fossil-fuels, chanting, "You care about the end of the world; we care about the end of the month."

In order to get round the public perception that climate action put taxpayers under more economic stress, politicians on the Left decided to bribe workers by saying that a Green New Deal would mean millions of "high-paying, unionized jobs." Although that appealed to the Precariat classes, it also undermined the goal of carbon reduction, because the higher the standard of living of workers, and the more disposable income they had, the more they would consume, the more meat they would eat, the more flights they would take, and the more vehicles they would buy. Obviously, in the mind of tech-utopians, highly paid "green" workers would all be "woke" vegetarians driving electric vehicles (EVs), so it would all work out. Yet that flew directly in the face of the simple reality that the US and EU were 100% reliant on foreign sources of critical minerals such as manganese, lithium, cobalt, nickel, graphite, aluminum, copper, and various rare earth elements required for EVs, solar panels, etc. Those necessities came from places like China and Russia, and they were not likely to part with them because they needed them for their own visions of national hegemony and supremacy – BRI and the Arctic Initiative.

So a Green New Deal was great for political positioning, but no one on the executive side of government had any illusions that it could actually be done. For the sake of social and economic stability, they had to pretend and go through the motions of a climate action kabuki dance.

Dean claimed the only reason that politicians established the IPCC, in 1988, was to muzzle scientists and mollify the public In order to stall any demand for drastic climate mitigation actions. Their mandate was supposedly to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system", but in actual fact, it was the way politicians successfully forestalled action while paying lip service to Climate change. By being ultra-conservative in their predictions, the IPCC reports set the bar for alarmism very high and pegged the Overton Window, or range of ideas tolerated in the public discourse, very conservatively, thereby putting the brakes on any global panic or public hysteria.

"So why are the politicians being so suicidal?" I asked Dean.

"In a nutshell," he answered, "They're cornered! But it's more than just trapped. Civilization tends to *entangle*. Commerce itself entangles. It's a lethal web – a tar pit."

Dean explained that technological advancement and civilization are a one-way trip. When the Wright brothers first flew, or Edison invented the light bulb, or the human genome was sequenced for the first time, everyone hailed those as great breakthroughs. "However," said Dean, "no one ever bothered to ask the crucial question – *'that's great, but once it's widely adopted, how do we back away from that innovation if we need to?*' I mean why would we ever need to 'un-invent' anything, right? Progress was nothing but good, all the time! So it was always a case of *onward and upward!*"

This kind of Whiggism – that history is just the inevitable march of progress towards enlightenment, material abundance and technical utopia – assumed that you would never have to backtrack on any useful innovation. Admittedly, sometimes some innovation would cause a problem, like CFCs in the atmosphere creating a harmful hole in the ozone layer, but that would just be something you fixed with some innovation or other.

"I mean," said Dean, "no one ever said to Jenner, *'immunology and vaccination is awesome, and it's bound to save millions of lives, but what if the world becomes overpopulated and we don't want to save lives anymore? What then?'* Obviously you would address that with some other kind of invention – like cheap and accessible contraception, for example. But the problem with that is it's an industrial solution. The next thing you know you have estrogens in the water supply and wildlife is being negatively affected on land and in the oceans. That just means another problem for technology to address and it probably means more jobs and GDP growth as an added bonus. Yet notice how each problem 'solved' usually leads to a host of new problems and the fixes demand an ever-greater escalation in the commitment to Progress and Industrialization itself. So civilization, innovation and technical progress are like quicksand. To quote Banquo in Macbeth *'To win us to our harm, the instruments of darkness tell us truths, win us with honest trifles, to betray us in deepest consequence.'*"

What Dean was saying was that Progressivism (based on the idea of continual "progress" through advancements in science, technology, economic materialism, and social progress) was a "ratchet" ideology. Each improvement in the human condition implied a rather subtle, and generally unnoticed, "escalation of commitment" to Progress itself. But suppose Progress itself became the problem? In the "in for a penny, in for a pound" world of social and industrial progress, the only way out of a Crisis of Progress would be to double down on more "progress" to see you through. And that could become like an alcoholic drinking more and more to avoid a hangover, or a martingale strategy, where you simply double the bet after every loss. Early in the Twentieth Century it was obvious to at least half the educated population in the West that this is what was happening on a global scale. The other half was pretty much all about "Party on, dude!"

"Take for example improved healthcare, immunology and technology that reduces infant mortality," said Dean. "That's great because it saves lives. But what if it saves *too many lives*? Now a lot of people, often women, will say *'you can never save too many lives!'* And what about that absolutely taboo subject, *overpopulation*? Well, you are just supposed to address that with women's rights and reproductive freedom. Academics will tell you rather flippantly that research shows that all you have to do is improve literacy for women and give them access to birth control and birthrates plummet."

However Dean claimed that was not actually correct. According to him, the popularly quoted shibboleth of the link between female literacy and reduced birthrates was associative, not causal. The actual reduction in birthrates was caused by economics. So, according to Dean, what techno-utopian progressives were really saying is, "in order to stop people having babies, you have to raise their standard of living."

The problem with that is a Catch-22. In order to curb population growth, women needed to achieve a standard of living of about the average person in Mexico or Nepal in order to put them at or below the so-called stable replacement level of 2.1 children per woman. That's an income level of about $7,000-$10,000 per year (or what academics call the point of demographic transition). Dean revealed that classified US government estimates of the stable and sustainable carrying capacity of earth with that standard of living for everyone was only about a meager 1.5 billion people (the emphasis being on "sustainable").

But in 2020, the earth's population was already about 7.7 billion. A majority of non-governmental studies were more optimistic, and claimed that earth's carrying capacity was somewhere between 4 and 8 billion, but they painted a far too rosy picture about what "sustainable" meant. Dean said, if models took into account things like the loss of topsoil, or water and energy scarcity, then the numbers tailed off significantly. And if you added in the effect of temperature rises already locked in by climate change, then it was clear you were dicing with overshoot and human extinction even before 2050.

Scientists at that time generally estimated that earth could support about 2.5 billion people at the standard of living that Americans enjoyed in 2020. But, according to Dean, unpublished government estimates said that figure was only possible with the standard of living of Mexico or Nepal and a mostly vegetarian diet. At that time, earth had about 1.9 hectares of arable land per person and average Americans were eating meat voraciously and using about 9.7 hectares per capita to feed themselves. Although economists and eco-modernists don't like to admit it, the constraints of the biosphere are fixed. The World Health Organization already estimated that 2.1 billion people didn't have safe drinking water and 4.5 billion lacked adequate sanitation, so even they admitted that the fact that the human population was expected to rise from 7.7 billion to around 10 or 11 billion by 2050 was going to be problematic. And yet overpopulation was such a hot button issue that the UN couldn't even bring itself to talk openly about it.

Unofficially, the UN admitted that the global population was already in severe overshoot. Even though the birthrate had halved since the 1960s, a dramatic rate of overshoot was already locked in. Their ultra-conservative estimate was that it was taking about 1.5 Earths to sustain the global population at that time. They estimated it would take three Earths by 2050. And energy consumption would have to increase 50% by 2030. In such a short timeframe, the only realistic source of such a massive increase would have to be from climate-destabilizing fossil fuels (mainly coal).

So the Catch-22 was that to save the one Earth and achieve a soft landing at the point of demographic transition, it would require the consumption-emission footprint of three Earths, thus defeating any chance of a soft landing. That's what I liked to call *The Civilization Trap*.

No politician could outlaw electricity. So once you ate the poisoned fruit from the Tree of Knowledge of science and industry, you were forced to carry on eating it until it killed you (or drove your species extinct due to overshoot and collapse). Dean said that politicians figured all this out way back in the Seventies when the Club of Rome published *The Limits to Growth*. In their 1972 report they calculated

that the limits to growth on earth would become evident by 2072, leading to "sudden and uncontrollable decline in both population and industrial capacity". They predicted that industrial output would peak around 2008 and then rapidly decline. Food and global services would peak around 2020 and then diminish rapidly. That would result in a peak in global population by 2030 followed by a big crash. By 2020 that was all starting to look ominously prescient, not even taking into consideration initiatives like Belt and Road, Green New Deals and Arctic Initiatives – which would all combine to make things a lot worse.

Publically, at global summits and public forums, politicians were saying that they were working to achieve sustainable development, working to eradicate poverty, protecting natural resources, and changing unsustainable production and consumption patterns. Whereas in reality they were all battening down the hatches for the gravest global crisis that humanity had ever faced.

"Why *can't* birth control limit the human population?" I asked.

"It's not that simple," said Dean. "Our modeling shows that the trend towards having fewer children is not stable with respect to a prolonged economic recession due to Climate change. People would actually start having *more* children in the worst of times. As soon as you add environmental degradation and lower standards of living from economic instability to the models, then the cost-benefit equation of having kids turns upside down again and birthrates increase. Even if you just decrease the prospects of children getting higher education, or decrease the social support in old age, or have a climate-induced fiscal crisis of the state, ironically it tends to favor having more kids (or maybe not ironically, if you assume that nature is trying to compensate for higher mortality rates). If you are poor, an extra pair of hands, and the potential of them providing senior care for you later, is worth more than the cost of an extra mouth to feed. As the relative cost per child goes down for poor people, the benefit of having children as a personal retirement plan increases – the more the merrier. The more economically deprived your offspring will be in the future, the more of them you need to support yourself in old age. And so on. It's the economic demographic of destitution – a race to the bottom."

So an increasing poverty rate, which was bound to come with the pressures of climate change and resource depletion, would actually *increase* birthrates. Therefore, the worst thing that could possibly happen at that point would be the diminishment of global prosperity.

"However," said Dean, "That's exactly what's liable to happen as a consequence of the ecological destruction due to overpopulation. So you just can't win."

Dean explained all of this rather gloomy assessment again on Easter Sunday at George's place.

"The politicians – the malakas!" said George. "They are just dancing on our graves!"

"Yes," said Dean, "Hugh and I call it *'Farewell to Species Fiesta'*. The power Elites know that there is no way out, so they are just having a final blow-out extravaganza at our expense. Things like Belt and Road and Greed New Deals are just their version of liquidation parties and the masses love it like free champagne on the Titanic!"

"We cannot allow that!" yelled Antonis, jumping to his feet.

"I don't see how anyone can stop them," I said.

"But we *must* do something," said Antonis.
"You could try and sabotage the global economic system," I said. "But people generally love their chains. They'll never leave their gilded cage, even if you open the door for them and throw it in the water. They think the cage is safe, so they will drown rather than abandon it. People are quick to point out that we can't end industrialization because that would mean that billions of people who are dependent on it would die. The problem is, it's looking increasingly likely that if we stick with it then *everyone* will die anyway."
I likened geo-engineering and Greed New Deals etc. to mass psychological pain-avoidance schemes. By focusing on external social and technological breakthroughs, people hoped that they could avoid a psychological breakdown and collapse of their cultural identity and worldview. Yet in order to make a *breakthrough*, they really needed a psychological *breakdown*. And psychological and social breakdown was what everyone was fighting against.
"What are *you* thinking, Anna?" Antonis asked Greek-Anna.
"I was just thinking that Ted Kaczynski was way ahead of his time," she said.
"It's funny you should mention him," said Dean. "I was just reading his new book, *Anti-Tech Revolution*. It's tough when you find yourself agreeing with a serial killer, but I think he's basically right in his assumption that technology is the principle danger hanging over us right now. I'm amazed he managed to write and publish a book while in a supermax prison."
"So what do you plan to do about all this?" asked George. "What's your plan given that the world is doomed?"
"It's complicated, " said Dean. "Maybe I can explain it to you in the form of a fable. Imagine there was a desert island, and a tortoise, a hare, a fox, and three little ants were shipwrecked on it without hope of rescue. Suppose they all had enough to eat, so long as they were all vegetarian and were careful how they used what grew naturally on the island. Let's pretend there was a natural spring that provided them with just enough fresh water to drink. And let's say they had a box of matches, so for a while at least they could make fires to keep themselves warm and cook their vegetables."
I sipped my wine as I watched the clouds scudding across the sky and settled in to listen to Dean's story.
Then one day, said Dean, the hare came rushing up to the fox and the ants, all out of breath, and confessed that he and the tortoise were playing with the matches on the far side of the island when they accidentally set fire to the brush. Now the island is burning out of control at one end.
They all go over to see and are surprised to find the tortoise casually roasting a banana on the end of a stick in front of a huge blaze. "Come and join me," he says, "This is a great opportunity for fried banana!"
But the fox is alarmed and says, "Don't be a fool! If we don't put out this fire, it's going to destroy the whole island and we'll all be doomed!"
So they pushed the tortoise aside and, against his protests, started trying to stamp out the fire. But it was too big for them and they soon found they had to retreat towards the other end of the island as the flames grew.

"Let's regroup in a safe place and decide what to do," said the fox, completely exhausted.
They all sat on the beach in a forlorn huddle on the safe side of the island and had a conference.
"None of us can swim," said the hare in a panic. "The fire is going to destroy our island and kill us all! Oh, Jesus why were we so stupid!"
"Pull yourself together," said the tortoise. "This is nothing special. Islands like this have fires all the time and recover quite readily. It's all about natural cycles. It will burn itself out naturally and then we'll all feast on roasted bananas and the whole thing will seem like a big joke. I'm not even sure that it was us that started the fire in the first place. As far as I know they start spontaneously all the time. It's nothing to worry about."
"I don't think so," said the fox. "We're in deep trouble. When the fire gets to this side of the island we'll all be toast, and even if we survive somehow, we will probably starve because our food supply will be burned to ashes. And it's all because of you and Hare."
"Well, let's not play the blame game," said the hare. "Our home is on fire and that's that. Now if we all work together perhaps we can find a solution. But if we start fighting amongst ourselves we are doomed for sure. Let's put Mr. Fox in charge. Come on Mr. Fox! You're so clever. I'm sure you can figure out a solution!"
"Why don't we build a boat?" asked the tortoise.
"We don't have the time," said the fox. "We could try to build a raft, but the wood we have doesn't float."
So the fox walked round and round in circles thinking deeply. Finally he blurted, "I have it! If we all work together we can build a tall tower with the wood we have left on this side of the island. It will take all the wood we have, but if we build a platform at the top that's high enough above the flames, we'll all be saved."
"But what will we eat after that?" asked the tortoise.
"We'll worry about that later," said the fox. "The first thing is to survive the fire."
"Wait," said the ants. "That won't work."
"What," said the fox. "We can't hear you down there. Speak up!"
"That won't work," said one of the ants, shouting as load as possible. "The tower will be made of wood. It will burn to the ground."
"Well do you have a better suggestion?" said a rather annoyed Mr. Fox.
"We still have the matches," said one of the ants. "Why don't we use them to set fire to this side of the island?"
The other animals all burst out laughing.
"That's very amusing," said the tortoise, "but this is hardly the time for humor."
"No, we are serious," said one of the ants. "If we start a second fire on this side of the island, it will burn and meet the other fire in the middle and burn itself out. If we stay on this side of the island we'll be saved."
"But what about the island?" shrieked Hare. "It will be ruined and we'll have no food left!"
"That's how it will be in any case," said the three ants in unison. "We can't help that now. So let's start another fire and at least we'll have a slim chance."

"What, deliberately?" asked the tortoise. "And destroy all the food we have left? We'll die of starvation! You're delusional! Over my dead body! At least with Fox's tower we might save some food and some seeds to start over."
"Well, they might have a point," said the fox. "We could still save some food and seeds and …"
"Listen," said the tortoise, "Let's get some order round here! If any of you tries to light any more fires, the hare and I are going to stomp on your heads. Right, Hare?"
The hare just stared at the ground and pawed the sand.
"Right, that's settled then," said the tortoise. "We'll go with Mr. Fox's idea. He's the expert. I'm sure he can figure out how to solve the burning wood problem as we go along. But in the meantime, let's do as Hare says and rally together. Let's start now and build the tallest tower imaginable! It'll be like a Manhattan Project – like a moon shot! I can see it in my mind's eye already. It'll be higher than the tower of Babel. It will be glorious! We can take masses of food up there with us. And who knows, perhaps we'll make all sorts of serendipitous discoveries while we are up there. After all, none of us has ever seen this island from a great height. Who knows what we'll discover? Onward and upward!"
"Just think positive," said the hare. "Because if you don't think positively then you are not part of the solution, you're part of the problem."
"That's the spirit, Hare," said the tortoise. "It's all about *hope*. None of us must lose hope, or we're all doomed!"
And so everyone, except the ants, got busy building.
Very soon Mr. Fox came up with a scheme to stop the tower burning. They would build a big water tank at the top and continually wet the tower from above as the flames licked around the base. And they would clear an area around the tower so that the flames wouldn't get too close. Mr. tortoise suggested that, he, as the most heat-vulnerable of the three, should be allowed to wallow in the water tank at the top of the tower while he passed water to the other two so that they could quench the flames while he enjoyed his immersion.
Taking positive action made them all feel good and as the first part of the tower took shape, they started to feel very hopeful indeed. Mr. tortoise began to look forward to his hot tub and started thinking of ways he could persuade Hare to give him a back rub (or shell rub) while he enjoyed his spa bath.
Meanwhile, the ants watched from a distance, and they could see that unwarranted optimism had blinded the other three. What they could see, and the others couldn't, is that the flames were huge, much larger than any tower they could ever hope to build. Although they were building with impressive speed, the ants could plainly see that the fire was outrunning their efforts. It was approaching much faster than they were building. As the fire crept closer, the work became more difficult, wood became harder to find, and the pace of their work began to slow as they were gradually overcome by the heat of the approaching flames – something they had not accounted for in their over-optimistic projections.
The ants slipped away quietly and got the matches. They bound them together with grass to make a raft, and put the matchbox on top as a deckhouse.
Coming to the climax of the story, Dean's face was aglow with passion.

“Finally the ants took off out to sea,” he roared, sweeping his hand through the air with exaggerated melodrama. “As they bobbed along safely at sea, they looked back to see the tortoise curling up in his shell as he was roasted by the flames. They saw Mr. Fox running round and round with his tail on fire, and then poor Hare jumped into the half-finished water tank and was boiled alive.”
“Holy cow, Dean! What an imagination you have!” exclaimed Barcelona-Anna.
“Did the ants survive?” asked Antonis.
“I like to think so,” said Dean. “I like to think that they came back to the island and lived off tortoise shell soup, fox fricassee and bunny stew until the plants grew back!”
Dean chuckled a good deal and then turned his attention to pouring another drink.
George sat thinking. He lit a cigarette and puffed for a while.
“And let me guess,” said George. “You three are the ants?”
He gestured to Dean, Anna and me.
“You’re very smart,” said Dean, sipping his wine.
“And the island is this island?” asked Antonis.
“No,” said Dean. “The island is the whole planet.”
“Hmm,” mused George. “That’s a lot to think about.”

Cp. 6. 'Liberty' and Death

Soon after Easter I was walking along the quay at the harbor one day when I saw an athletic looking girl fishing from the rocks with a spear gun. I had been talking to Yannis, Mr. Panos' fascist son, and he was lamenting all the immigrants coming to Greece. What concerned him most was the Muslim refugees from Syria and the economic migrants from Africa. I seriously doubted if he ever saw a person of color more than once or twice a year, so it was hard to see why he had such strong feelings about them.

I was intrigued by the girl with the spear gun. I assumed she must be Greek, but her unusual character stood out. She was wearing tight pants and her rump was pretty generous Her body was rippling with muscle in that sporty, horse riding-fanatic way you occasionally see – kind of ordinary looking yet sexy with raw, untamed, tomboyish energy and *joie de vie* at the same time.

She had obviously speared the fish she was after once already and it got off the trident-shaped tip of her spear, so she reloaded and was after it a second time as I approached. I could see the wounded fish floundering in the water, hanging tail-down almost vertically and thrashing spasmodically in its death throes. The sun caught its bright silver flank occasionally, and I could see when it glinted that it was a giant. The girl was gripped in a fever of excitement as she jumped from rock to rock, trying to get to a decent vantage point for the kill shot. It struck me that, because it was such a rare beauty, it was precious and should be protected, but by the same token, she ardently wanted to spear it. I was awestruck by her almost obscene, predatory focus as she bounced along like an excited truffle pig that had just picked up the scent. I thought, she might as well be wearing a t-shirt with "This is all about ME!" written on it. I wondered if all she saw in a fish was a dollar bill, or whether it was just dumb prey to her, like a cat instinctively chasing a mouse. What fascinated me was her total lack of self-consciousness and how completely absorbed she was in the hunt. If I could have exchanged places with her on the rocks, I imagine I would have been ridden with guilt for robbing Poseidon of such a magnificent treasure. So it was with a kind of envy that I watched her take aim with such aplomb, and expertly hit her mark with glee and no apparent self-doubt. When she landed the fish she held it up proudly for me to see. She was grinning from ear to ear and I smiled back wanly, feeling a little heartbroken that such a beautifully rainbow-colored fish, and such a fine specimen, was so easily reduced to mere lunch.

I was pondering what an appropriate metaphor that was for the world, when I caught sight of a ketch approaching the harbor. It was unusual because it was flying an American pennant and there were not many vessels from the US in the Ionian. After watching George help them dock, I went over to introduce myself. I saw from the stern markings that the boat's name was *Liberty* from Norfolk, Virginia. The couple on board were probably married and in their mid-Sixties. They were the phoniest couple I'd ever met. The woman was very gushy and introduced herself and her husband as "Jo and Joe."

"We both travelled all over the world to find someone with the same name," she bubbled, "And finally we found each other and set sail together."
"I'm Hugh," I murmured.
"Joe," said Joe. "Excuse me but I'm a little hard of hearing."
He had an unnerving kind of electronic bug in his ear with alarming looking gold whiskers on it.
"From Norfolk?" I asked.
"Yes," he said.
"Ex-navy?" I guessed.
"Yes," he said, slightly loosing a little of his *bonhomie*.
"Military intelligence?" I asked.
"Yes," he said, his eyes narrowing now.
"Signals?"
"Yes," he said, dropping my hand. "Do I know you?"
"No," I said, taking an instant dislike to him. "I just guessed, because that's about the only thing going on there."
"I see," he said, suddenly going cold.
"Well let's go for coffee sometime, shall we?" said Jo, trying to be cheerful. "We have to go through our docking checklist and cruise debrief now, if you'll excuse us."
"Docking checklist? Debrief?" I thought. "Hoo boy!"
When I was sure they weren't watching me, I went to *Pizzazz* and told Dean about the new arrivals. Barcelona-Anna was away and I found him alone.
"God, so soon?" said Dean when I told him the news.
"It looks like it," I said. "Let's watch them. Their boat looks as suspicious as hell. All the hatches and portlights are blocked out and there's a whip antennae on there about as big as the mast."
"He could just be a forward scout for Souda Bay," said Dean.
The US Navy had a large base further south, on Crete, and sometimes they would send undercover patrols of innocent looking scouts to look for any unusual activity in the Eastern Mediterranean – basically a precaution adopted after the bombing of the *USS Cole*. If you were a retired naval officer, or worked in a US intelligence agency, and you wanted to spend your sunset years sailing around the world on a yacht at taxpayer's expense, then you could get involved with secret espionage programs for old folks who wanted to spice up their retirement. The government allowed you to indulge your fantasy of being like Robert De Niro's character in *Meet the Fockers* and rig up a yacht, plane, RV (or anything you could get away with) like retired CIA operative Jack Byrnes in the movie. "Jo & Joe" looked just the type. And "Liberty" seemed to check out as just the sort of unimaginative name for a boat their type would pick.
Dean looked surreptitiously at them across the harbor with binoculars. "I think I recognize those solar panels," he said. "I think it's the B-Team"
By that he meant the CIA.
He flipped out his phone and began to scan for wi-fi networks. "Yep," he said. "There it is. Two of them. Usual name and it even says in parenthesis 'usual password'! Man, that's so B-Team. I'm going to go talk to them."
"Is that wise?" I asked.

"Well if they are after us then they can track us down in a heartbeat, so I may as well go and fish for info."
"Maybe it's better if he doesn't know we are here together," I said.
"Yeah, you could be right," said Dean. "Maybe we should split up for a while. But stay here till I get back."
Dean soon came back looking as white as a sheet. "I know the fucker," he said. "His real name is Wesley. This doesn't look good. I'm going to try and see if I can hack into those solar panels and I'll get back to you later."
I went walking down to George's place and saw Barcelona-Anna there having coffee. She called me over and I tried to look as natural as possible and went to sit with her. I told her that Dean would be along shortly, and mentioned in broad terms that there was a problem with the new boat that had just arrived. She looked a little rattled, but I said Dean would fill in the details when he arrived.
It took a long time, but eventually Dean came over. I could tell from his expression that things were not good.
He sat down and said in a low voice, "They're onto us, Hugh. Well maybe me more than you. I don't think they know about you. But they are definitely onto me. I hacked into the guy's laptop on the boat. He's downloaded loads of stuff on me - the full caboodle. I'm definitely his mark."
"My god," gasped Anna. "What have you guys done?"
"Well," said Dean, "I guess it's finally time I told you. Let's take a walk up the hill and have a talk. I've got a lot to tell you."
"Should I stay here?" I asked.
"No," said Dean. "You're as much a part of this as I am, I guess. You'd better come along too."
So Dean made us leave our phones on the boat and we walked up through the village, past the church and the outsized monument to George's grandfather Alexis and up past the bakeries. It was only when we started out on the trail to Ormos Aetolofos and were winding our way through the whispering pine forests that Dean started telling the story.
"I'll come clean, Anna, and explain to you why we are on this island. And I better explain why I insisted we buy a boat, and why Hugh is here in his boat too," said Dean.
I felt so sorry for Anna at that moment. I could see her eyes welling up in the late afternoon sun. And even recalling it now, I feel a little bit gutted.
"Where do you think I should start?" Dean asked me.
I raised my eyebrows and thought for a while and then said, "I guess you had better start with the *Dzhanibekov Effect*."
So that's how Anna was finally introduced to the secret focus of Dean's life, and mine, for more than a decade. My head was whirling at that point, because as Dean laid everything on the line, I knew this would have ramifications for them that no one could predict. I thought it could possibly end their marriage, or get us both locked up, or any number of things. Our fate at that moment depended a lot on Anna's reaction. I had visions of her thinking Dean and I were mad, and perhaps she would break away and run back to the village screaming. I just didn't know. But one way or another, she eventually had to be told. The time was ripe.

So what is the *Dzhanibekov Effect*? And what relevance did it have to us being on Agios Nikolaos?

Vladimir Aleksandrovich Dzhanibekov was a former Russian cosmonaut. He made five spaceflights, but he is most famous in Russia for his flight to save the Soviet space station Salyut-7 in June, 1985. The mission, on Soyuz T-13, became part of a heroic film, released in 2017, about the first docking with a "dead" space station and the epic struggle to get it operational again. Once electrical power was finally restored, unmanned cargo ships docked with the station and left supplies. The Dzhanibekov Effect was discovered when Dzhanibekov was unpacking one of those cargo crates. The crate was locked down with a familiar wing nut (or butterfly nut). The cosmonaut spun the wing nut off the bolt on a packing case and it came off and floated along in space, spinning like a top as one might expect – then it did something remarkable. As if it had a mind of its own, it spontaneously flipped 180 degrees, apparently for no reason!

It carried on spinning for a while, and then suddenly it flipped back again and continued on its course as if nothing had happened. It looked utterly supernatural. Almost unable to believe his eyes, Dzhanibekov saw it spontaneously flip again a few seconds later. As it sailed along, corkscrewing through the spaceship, as if by magic, it continued to somersault at regular intervals, even though there were no external forces applied to it. It seemed surreal. Dzhanibekov filmed what he saw and beamed it back to Soviet authorities on the ground. In 2020, when we told Anna about this, it was possible to find Dzhanibekov's film footage all over the Internet – and we had to show it to her later in order for her to fully believe us. When the Soviets saw the film they immediately classified it as top secret. It remained a closely guarded secret for ten years.

But six years after Dzhanibekov's discovery, in 1991, a paper called "The Twisting Tennis Racket" was published in *The Journal of Dynamics and Differential Equations*. Although the authors had no knowledge of the Dzhanibekov secret, they described how if you held a tennis racket flat in front of you, and then flipped it, it not only flipped but it also made a strange half turn. When you caught the handle again the other face was always up. It was all about something called the *intermediate moment of inertia.* This quirk, which is sometimes called the "Tennis racket effect", only happens with objects that have *three* moments of inertia. If you try the same thing with a ball for example, the effect doesn't happen, because a ball has only one moment of inertia. Something like a Frisbee has two moments of inertia, but you need something like a book, tennis racket, or wing nut, with three moments of inertia, to demonstrate the full effect. Those kinds of objects are called "asymmetric tops".

The authors of the "Twisting Tennis Racket" paper thought that the effect was new, but it turned out that the theorem was described at least 150 years before in a book called *La Rotation* in France.

What's happening is that tiny centrifugal forces build up slowly and imperceptibly on the intermediate axis (the flip axis, as opposed to the spin axis). At some point the inertia on the second axis can no longer stabilize them. The object flips suddenly, and as it does so, it accelerates dramatically through the first 90 degrees of the flip. On the next half of the flip, the centrifugal forces put the brakes on until

the somersault more or less stabilizes again as the object arrives at the 180-degree mark. That makes the action look very crisp, symmetrical, snappy and deliberate – almost as if it's under remote control. The spin continues until the centrifugal forces build up again and the whole thing reverses. In space, the flip on a spinning object happens so unexpectedly it looks quite alarming.

So, if the Dzhanibekov Effect was well-known classical physics, why, you might wonder, did the Soviets keep Dzhanibekov's re-discovery of it secret for so long? The reason is that after Dzhanibekov made his discovery it fascinated him so much that he carried on experimenting with it while he was up in space. Next, he took a hand-sized ball of modeling clay, attached an ordinary hex nut to the outside as a counter-weight, and spun it to see what would happen. It also demonstrated the same behavior as the wing nut. So I'm sure you can guess where this is all going. The obvious implication was that since the Earth resembles a ball of modeling clay spinning in space, then maybe, just maybe, it could occasionally suddenly flip, just like Dzhanibekov 's wing nut or ball of putty.

Somewhere along the line, while I was working as a defense contractor to support Dean, I had to look up the *intermediate moment of inertia* for one of the computer models I was doing. Suddenly I twigged what Dean's project was all about. I came across a YouTube video explaining the Dzhanibekov Effect and instantly it all fell into place.

I confirmed it with Dean by playing the drinking game. I still remember the shocked expression on his face when I hit the bull's-eye: "It's all about the Dzhanibekov Effect, isn't it."

He looked a bit pole-axed and just sat there in stunned silence for a while. Then, just at the point I was beginning to think he was signaling a "no" (and obviously lying to me for the first time), he lifted his drink as if it was a lead weight. He slowly put it to his lips, the slowest I'd ever seen, and took a long deliberate drink with eyes staring blankly ahead.

I had one of those moments where you experience a brief "red-out" and the blood starts ringing in your ears.

"It's about the Earth flipping when the ice caps melt," I said, feeling the walls starting to get wobbly all of a sudden.

There was another long drawn out, heart-pounding silence. And then he took another time-dilated, glacially slow, sip of his beer.

From that point on, my life was never quite the same. With that second sip of beer, Dean had in effect just granted me honorary Q-clearance.

You see at the end of the YouTube video, it talked about how Dzhanibekov had toyed with the clay model of Earth and found that it was prone to flipping 180 degrees occasionally just like the wing nut. Yet the video ended confidently, assuring viewers that "the Earth *won't flip*, because it's spinning around the axis with the maximum moment of inertia … and that, is *stable*."

Except, what I had learned, or guessed, while doing all the obfuscated modeling on Dean's behalf, was that it wasn't really true. Hence Dean's secret research project.

Now it's important here to note the difference between the Earth's *rotational* axis and the *magnetic* axis. The magnetic axis is where compass-needles point, and magnetic north migrates all over the place. Magnetic North moves randomly due to

the vagaries of how the molten iron core chooses to flow below the mantle. The magnetic poles are known to shift, and even to flip occasionally – a process called geomagnetic reversal, which has happened about 183 times over the last 83 million years. The last time it happened was about 780,000 years ago.

Now the geographic poles (i.e. the rotational poles) are *never supposed to flip*. They wander about a little, like a spinning top with a bit of a drunken swagger, and that's called *precession*. Precession, unlike geomagnetic variation, is utterly regular and Earth's axis of rotation does a single gyration due to precession in a cycle of approximately 25,772 years.

Ancient astronomers have known about precession since prehistory and that's where the procession of the zodiac comes from. The reason why *The 5th Dimension* sang about this being the "Dawning of the Age of Aquarius" in the Sixties is because every 2150 years a new sign of the zodiac passes through the equinoxes due to *precession* and many claimed that the 20th Century marked the transition from the Age of Pisces to the Age of Aquarius (which works kind of nicely, if you consider that the fish is the sign of Christianity and the 20th Century marked the waning of Christian religion in the civilized world).

So precession and geomagnetic variation aside, the Earth's rotational axis is supposed to be cocked permanently at 23.5 degrees from the plane of its orbit around the sun and the poles are only supposed to be slightly perturbed on geological timescales by things like continental drift. The movement of tectonic plates (travelling about as fast as toenails grow) causes a bit of polar wander as the Earth's spin realigns with the changes in maximum inertia as the mantle and crust rearrange themselves. And that's about all.

But in April 2016, Surendra Adhikari and Erik R. Ivins from the Jet Propulsion Laboratory published a paper in *Science Advances* about Climate change-driven polar motion from 2003-2015. Ever since 1899 scientists had been tracking the migration of Earth's northern rotational axis using micro measurements. They knew the rotational pole was moving west towards Hudson Bay with the melting of the Laurentide ice sheet (covering North America from 2.5 million years ago to the present). Using space geodetic and satellite gravimetric data, Adhikari and Ivins came to the conclusion that the Earth's north rotational axis had stopped moving west around the year 2000. At that point it suddenly changed direction and started to veer east, moving twice as fast. The reasons they cited were that the Greenland and West Antarctic ice sheets were melting due to Climate change and water around the globe was drastically shifting. Human-caused climatic disruptions where literally perturbing the rotation of the Earth.

Greenland lost 7,500 gigatons of ice mass over the course of the 20th century and that moved the Earth's rotational axis about ten meters. That doesn't really sound like a lot, and so although the discovery was reported in the media, it was only considered remarkable from the point of view of how unexpectedly impactful human activity could be on the planet, and in such strange ways. Reported implications included minor nuisances like how the Global Positioning System (GPS) would have to take the new discovery into account, and how this lent weight to the debate about whether scientists should name the current epoch the *Anthropocene* in recognition of the permanent effects of humanity and machines on the planet. Aside

from that, the reports were upbeat and pointed out how the discovery could serve as a useful indirect measurement of the progress of Climate change. They probably wouldn't have been quite so sanguine if they had known about the Dzhanibekov Effect.

The Soviets kept Dzhanibekov's discovery secret because they instantly made the connection with the rapid mass displacements that were happening around the world due to human activity. In 1988, NASA scientist James Hansen was just testifying to the House of Representatives that Global warming had begun. The prevailing myth, particularly with activists on the Left wing (including XR), was that the government simply ignored the warning. But that was not the case at all. On both sides of the Iron Curtain research immediately started in earnest into the security implications of Climate change – as one would expect, given the example of how governments around the world rallied when the "ozone hole" was first discovered in 1982. In that case, as soon as the blame fell on manufactured chemicals (like CFCs and halons), the *Montreal Protocol* was quickly adopted and in 1987 ozone-depleting chemicals were banned. Thanks to those timely measures, the hole in the ozone layer has effectively repaired itself. So what accounts for the difference between that rapid response and the tardy reaction to CO_2 and other greenhouse gas emissions?

If you believe the hype, then that was because the evil and greedy oil companies stepped in and skewed things towards inaction so that they could carry on making a huge financial profits from of fossil fuels. But that's a gross distortion of what actually happened. The reason that governments didn't immediately step in to combat greenhouse gas emissions was that secret research and analysis showed that, unlike with the hole in the ozone layer, there were no quick fixes for general military-industrial and logistical effluent. In fact, contrary to popular belief, there were no fixes, period. By 1989, just as Britain's Conservative Prime Minister, Margaret Thatcher, was giving an inspiring speech to the UN General Assembly and rallying the world for coordinated action against environmental degradation and climate change, behind the scenes government apparatchiks on both sides of the Cold War were coming to the same bleak conclusion: *the world was screwed and there was nothing anyone could do about it.*

It was not so much that oil and gas amounted to crucial strategic materials, or that they underpinned national security and the global hegemony of the petro-dollar (although that was certainly a part of it), it was more to do with early recognition of the *Civilization Trap* I mentioned before.

According to Dean, *The Jason Group*, and others, independently came to the conclusions that led to the far-reaching, but totally undisclosed, *Milliways doctrine*. The Milliways doctrine was not named after a person. Instead it was gallows humor - a dark reference to Douglas Adams' book called *The Restaurant at the End of the Universe*. "Milliways" was the name of the restaurant in the title. Dean and I called the doctrine the *'Farewell to Species Fiesta'*, and it was intended to be the unified response to global catastrophe right up to the final implosion of government near the end of complete planetary collapse.

With no viable fixes in sight, a top level decision was made to just cynically party on until we all dropped, while keeping the public in the dark for as long as possible.

There were good reasons why the US government reneged on the Paris climate agreement and started gutting the Environmental Protection Agency (EPA). And those reasons went far beyond the liberal rhetoric about how governments were just corrupted by suicidal corporate influence.
As far back as the Late Eighties, governments had already secretly found the answer to the dilemma posed by *The Limits to Growth*. There really was no point in capping greenhouse gas emissions or suffering economic austerity. As the logic went, if overshoot, collapse and a mass die-off were inevitable, then why not just simply embrace the collapse? "Purge the rot from the system" as Herbert Hoover (or Dr. Strangelove) might have proclaimed.
Frank Sinatra might have summed it up with:

> *Before the fiddlers have fled,*
> *Before they ask us to pay the bill,*
> *and while we still have that chance*
> *Let's face the music and dance.*

Except that the Elites had no intention of facing the music. By the turn of the Millennium, the G7 nations and the BRICS countries all secretly fell in line behind the Milliways doctrine and began preparing for massive social unrest, breakdowns in national security and the collapse of food security in the decades ahead. For example, Trump's wall and Brexit were actually preparatory measures taken in anticipation of mass human migrations expected due to Climate change, economic destitution and famine. And governments were happy that liberals misinterpreted it as merely typical Right-wing xenophobia, because that gave them cover and kept the public from guessing what it was really all about.
In fact, Trump's wall was not even Trump's wall. The initiative came from the Pentagon and the DHS and it was fed to him via a flea in his ear called Roger Stone. Likewise, even if Prime Minister David Cameron was personally surprised by the result of the Brexit referendum in 2016, it came as no surprise to the intelligence operatives on both sides of the Atlantic that put their digital thumb on the scales of democracy to secure the "Leave" outcome for practical reasons of national security. With the coming mass human migrations, Britain needed the Channel as a castle moat for safety reasons. But mere prime ministers were not privy to that level of information.
By 2020 walls and barriers were rapidly going up all over the world – legal, physical, digital, trade, fiscal, and migratory – all a globally coordinated part of the Milliways doctrine. As part of stealth preparations, reconfigured versions of the Bamboo Curtain and the Iron Curtain were quietly going up once again too. India erected a 4000 km long separation wall with Bangladesh. And citizens around the world were so absorbed by the Internet they barely noticed that it was fragmenting into the "Splinternet" behind great digital, legal and legislative barriers like the *Great Firewall* of China and Article 13 in the EU. The only things bucking the trend of balkanization were international agreements for policing citizens as ever more authoritarian governments prepared to extend their extra-national reach in anticipation of political opposition, insurrections and eco-terrorism. People like

Julian Assange and Jamal Khashoggi were early victims of inter-governmental cooperation to quell international opposition and dissent based on tacit conformity to the doctrine.

Ironically, fake rebels in Astroturf "controlled opposition" movements like the Sunrise Movement and XR were calling on governments for a mass mobilization (like a moon shot, or Manhattan Project) in response to Climate change, without actually realizing that governments were already in the advanced stages of preparation for the threat – only not in quite the way the average liberal imagined in their closeted world view.

An assumption of the Milliways doctrine was that overshoot in terms of human population occurred around the time of the American Civil War. A sustainable human population was only about one billion people (the global population at that time). Half a billion was considered ideal.

Human bottlenecks had occurred frequently in the ancient past. According to the doctrine, which was almost eugenic in character, it was not so much that a mass die-off was a tragedy; it was just a question of making sure that the "right" type of people survived. They thought that if the Common people – the Great unwashed – had their way, humanity might emerge from the ashes of collapse as a race of primitive hunter-gardeners. But if the Elites had their way, they expected that the human race could rise again as sophisticated, intelligent, civilized, Children of Plato's Noble Lie. So forget "Climate justice"! Basically, based on the Milliways doctrine, the Elites intended to burn the social pyramid of humanity from the bottom up. It was pretty much the plotline of the computer-animated adventure movie, *Antz*.

So, although the doctrine was not overtly cognizant of the Dzhanibekov Effect and the latent potential of Earth-flip, people aware of the possibility and privy to the doctrine obviously viewed it as one of the few potential lifeboats on the Milliways *Titanic*. It was the ultimate loophole.

The crucial question was, if the Earth flipped, what would be the best way to survive? How would the Elites go about saving what they considered to be the cream of the human crop?

I imagine that this must have been the topic of discussion in many high-level venues around the world, probably resembling the famous War room scene at the Pentagon in Stanley Kubrick's 1964 black comedy *Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb*. Perhaps it was more a case of: *How I Learned to Stop Worrying and Love the Climate Holocaust*.

"Embrace that post-Apocalyptic New-Earth smell," as Dean was fond of saying sarcastically to me, vaguely imitating "I love the smell of napalm in the morning" from the Lieutenant Colonel Kilgore character in *Apocalypse Now.*

Now initially you may naively assume that if the Earth flipped then it would be best to be far away somewhere up in space or on the Moon. But that's not the case. At best, such a survival strategy could only be used as a kind of contingency to make sure at least a handful of people survived to repopulate Earth.

The first problem with that line of thought is that you couldn't save very many people that way. The only way of saving a viable breeding population would be to make some sort of permanent moon base for a select few and provide some way for

them to get back to Earth after the catastrophe. The problems with that are legion. For starters, you could never keep such a vast scheme secret. At some point word was bound to leak out about what the project was for and there would probably be mass panic and pandemonium on Earth.

In addition, you would face the formidable problem of selecting who the lucky survivors would be in a ghastly kind of global parachute debate that would probably just end in conflict and bloodshed.

Even if you did manage to keep the whole project secret, and could build an international moon base on the dark side of the Moon for example, then you still have the problem of not knowing precisely when the Earth-flip was scheduled to occur. You would have to keep a large number of people on the off-world colony indefinitely, and for understandable reasons, they might refuse to be rotated out, even though the radiation out there might slowly be killing them.

The major issue is getting back to Earth. After the flip event, you couldn't rely on any supporting infrastructure being left intact on Earth. So survivors would have to land somewhere in a capsule with very little in terms of provisions and probably so weak from an extended period in microgravity that they probably couldn't even stand up. The idea of dozens of space crews landing safely and successfully finding each other so that they could link up and start a community is virtually inconceivable.

So your next idea might be that the best way to survive would be in an airplane circling round the globe until all the commotion had died down. Again, you couldn't guarantee you would have a place to land again after the catastrophe. Serviceable airports may wind up being hard to find. Aside from that, it turns out that if the Earth flipped, the last place you would want to be is flying in a plane. That's because the engines would most likely encounter volcanic debris and stall. If you take fuel endurance into consideration too, you soon discover that an aircraft is a bad bet.

Modeling what happens during an Earth-flip (like Dean and I did), you discover that the major issue to contend with is tidal forces. What the observer on the ground experiences is earthquakes, volcanoes and mega-tsunamis as the Earth's crust comes under stress from the redistribution of it's moment of inertia. But the force of gravity stays constant. You don't fly off into space like a bit of splatter on a potter's wheel, for example, and you don't lurch around like in the backseat of a car that suddenly comes to a screeching halt or goes off into a spin. The Earth's magma remains more or less stable in the core and the magnetic poles essentially remain fixed where they are.

Everything on the Earth, including the atmosphere, is moving together in the same inertial frame. So when the Earth flips nothing much happens on the macro scale (at least in principle) and objects don't go careening into each other like in a coach that has just hit a wall or spun off the road. Of course all the geo-coordinates of the GPS system become meaningless, but the satellites and Moon remain in their orbits as if nothing whatsoever has happened, the Van Allen radiation belts are unaffected, and most things on Earth stay pretty much put.

Anyone who survives the seismic and volcanic disruptions, and lives to see the skies clear, would be witness to a strange new phenomenon that happens to be mentioned in the Quran: *the sun will start to rise in the west rather than the east*.

The Ancient historian, Herodotus, mentioned that long before the Great Flood the sun came up from the west, and just before the flood it started rising in the east. According to Islam the sun will rise in the west again "in the final hours".
As Dean told me, "The science in the Quran is basically what you would expect from goat herders. Mohammed thought that the world was flat, like a magic carpet, and he thought that Allah created mountains as sort of paperweights to hold it down like stones at the corners of a stretched out blanket. But even a schizoid camel driver can get some things right occasionally. He must have talked to wise men in Egypt, because someone must have told him on his travels that at the Hour of Apocalypse, Allah will tell the sun to 'rise from its place of setting'. Which, incredibly enough, we now know is actually about the only bit of solid science in the Quran!"
In Islamic eschatology, the *Day of Judgment* is characterized by the annihilation of all life, which will then be followed by the resurrection and final judgment by Allah. On that day everyone will believe in Islam, but – clever-dicks take note – it will be too late to repent if you are not already a believer.
"Flipping annoying," quipped Dean.
All anyone would see, if they were unlucky enough to observe the flip from a vantage point like the International Space Station (ISS), was that Earth's shadow would change its orientation relative to the continents over a 24-hour period. Why such an astronaut would be unlucky is that during that period they would see the ground gradually getting covered over by plumes from massive volcanic eruptions and smoke from mega-fires in cities around the globe (mainly in the aftermath of massive earthquakes and bushfires ignited by lighting from mega storms). Particulate from volcanic eruptions would be injected into the stratosphere and aerosols would form a thick global layer of sulfuric acid haze for months, blocking out the sun and making temperatures plummet due to the Global dimming effect. The debris in the atmosphere would probably preclude any hypothetical astronaut on the ISS from returning to Earth for a very long time – maybe until after their food had run out.
Essentially the post-flip world resembles the hypothetical "Nuclear winter" after a global nuclear war – only Nuclear winter *plus gigantic tsunamis and floods*. And unfortunately, it *would* also include ionizing radiation. Not from nuclear weapons, but from nuclear power stations that would melt down soon after the power grid went down. There are about 440 nuclear power stations around the world. As happened with the Fukushima Daiichi accident, most nuclear power stations will suffer meltdown as soon as they go off grid and their backup generators run out of diesel (or get flooded by tsunamis), causing their cooling equipment to shut down. So anyone that survives in the "volcanic winter" landscape will have to contend with over four hundred Chernobyl-type disasters too. But it is doable.
It turns out people have survived an Earth-flip numerous times (minus Fukushimas, of course, which is something new to look forward to). So it's possible to look back in pre-history to determine the best survival strategy. And that's what the Soviets did while Dzhanibekov's discovery was secret.
Their preliminary analysis showed that when the Greenland and West Antarctic ice sheets start to melt, and when the South Asian high mountain region loses enough ice (sometimes called the "Third Pole", because the area stores so much snow and

ice), at some point the Earth's maximum moment of inertia will be displaced enough for the whole globe to suddenly flip. In the light of that they looked back into the past to see if Earth had ever flipped before, and if so, how often. How catastrophic was the flip liable to be, and how had people managed to survive in the past? Straight away they re-discovered a fringe theory called the *Cataclysmic pole shift hypothesis*. The idea that the Earth's rotational poles could reverse was considered pseudoscientific catastrophism at its conspiratorial worst by mainstream academia, and yet the idea kept cropping up again and again throughout history. The general perception in mainstream geology was that anyone who proposed that Earth's axis shifted, let alone flipped, was a crank of the first order, since most people assume that it would require a significant amount of force to move the earth, and no such force existed. But the idea just would not die.

Joseph Adhemar proposed the theory at least as far back as 1852. He speculated that ice accumulated at the poles and eventually the excess weight caused the Earth to flip. So he touted the idea that the poles were once at the equator and vice versa. In 1872 an article entitled *Chronologie Historique des Mexicains* interpreted ancient Mexican myths as evidence for four periods of global cataclysms due to changes in the Earth's rotational axis. It mentioned one such cataclysm around 10,500 BCE. An electrical engineer, called Hugh Auchincloss Brown, introduced a cataclysmic pole shift hypothesis back in 1948 in which he claimed that Earth's axis of rotation shifted due to the accumulation of ice at the poles, causing it to tip over approximately every 7,000 years.

The best-known cataclysmic pole shift theory was in a book called *Worlds in Collision*, which was published in 1950 by Immanuel Velikovsky. Although the book was a bestseller in the US, it was roundly ridiculed by scholars and has been celebrated as a canonical example of pseudoscience ever since. Velikovsky was a psychiatrist and psychoanalyst, and in his book he used comparative mythology and ancient texts to piece together evidence that Earth's history was punctuated by occasional catastrophes, some of which affected the rotation of the Earth. Unfortunately he was not on solid ground with the celestial mechanics that he came up with to explain the source of the ancient legends. He virtually re-wrote the laws of physics to support the myths. He claimed that the rotation of the Earth could be affected by electromagnetic fields, and that around 15,000 BCE Venus was ejected from Jupiter as a comet which swept past Earth close enough to cause a massive shift in Earth's orbit and alter its axial inclination. His theories were inconsistent with Newtonian mechanics and the laws of motion, and the planetary orbits and near collisions he described were derided for violating the laws of conservation of energy and conservation of angular momentum. Although the mythological history he came up with, from sources as diverse as India, China, Greece, Rome, Assyria and Sumer, seem to have tantalizing support for concordant accounts of an ancient global cataclysm, the physical mechanism he used to explain it was wholly inadequate.

The next proponent to enter the stage was Charles Hapgood with *The Earth's Shifting Crust* in 1958. Like Hugh Auchincloss Brown, Hapgood speculated the accumulation of polar ice destabilizes the Earth, but rather than causing the rotational axis to flip, Hapgood imagined that only the Earth's crust was displaced

(something akin to the skin on custard slipping if you disturbed the bowl). Hapgood thought that the crust shifted about once every 5,000 years (though less than 40 degrees). He conversed with Albert Einstein (who actually wrote a forward to his book) and Einstein pointed out that, according to his calculations, the weight of the polar ice is insufficient to cause the poles to shift. In truth, Einstein was never very good at angular momentum, and he didn't know about the Dzhanibekov Effect, but he was correct in his intuition that the Earth's tectonic plates didn't work as Hapgood thought. In later works Hapgood conceded that Einstein was right, but ended up still convinced that Earth's crust was capable of displacement and speculated it was due to some unknown sub-surface phenomenon.

Hapgood's pole shift idea was taken up in the movie *2012*, which claimed that the end of the Mesoamerican Long Count calendar on 21 December 2012 coincided with a world-ending Earth-crust displacement. According to the plot, China and the G8 nations began building nine arks up in the Himalayas near Cho Ming, Tibet. Each ark rescued 100,000 well-heeled paying customers, and eventually the protagonists fetch up on the Drakensberg Mountains in Southern Africa in Noah-like fashion. And that's not too far off the conclusion the Soviets and the US Office of Net Assessment came to independently about the best way to survive an Earth-flip.

They both decided that the best way to survive would be to be on a boat somewhere out at sea. Now that's probably counter-intuitive, because most people who are not sailors would assume that the last place you would want to be when facing mega-tsunamis is on a boat. But the truth is that if you are far enough out to sea, then tsunamis are just swells and only begin to break, and become dangerous, when they reach shore.

Further rationale for being in a boat is that it's a good place to be from the point of view of surviving earthquakes, fires on land, social unrest and rapid sea-level changes. Most important of all is that, in a global event with such a high level of uncertainty, you would want to be as mobile as possible. No one can tell for sure which volcanoes will blow, or where nuclear fallout from power plant meltdowns will land, or where sources of food or fresh water might survive, so it's best not to stake yourself to any one particular spot. For another thing, you can live comfortably on a boat indefinitely, and with a water desalinator and solar, not to mention a fishing line or two, I knew from experience that the lifestyle might grow on you to the point that you might decide not to go back ashore even when it's finally safe to do so!

Ask Kevin Costner - *Waterworld* ain't so bad (even if the movie is dreadful).

Perhaps unexpectedly, the gravest danger you would probably face on a boat is floating ice, since global average temperatures would plunge in the volcanic winter conditions that would rapidly supplant the global warming that caused the Earth to flip in the first place.

Perhaps best of all, was the relative accessibility of the solution. It was a bit of a plot-flaw in the movie *2012* that they sold tickets for the arks for €1 billion per person. One can only speculate on the utility of the Euro as the major currency post-catastrophe, or how the seller would usefully cash in such a lot of money pre-catastrophe. As Dean and I both proved, any fool that could afford a small boat was well positioned to become a potential Noah, and you didn't really need a billion

Euros, you just needed the priceless information of what, when, and where. And if it turned out the science was wrong, and the Earth never flipped, you would hardly have cause to regret your prepping strategy anyway (assuming of course that you weren't dumb enough to think you needed to transport your boat up to Tibet).
But the nagging question still remained: *where was the best place to be in a boat when the earth flipped?*
That's the project that Dean was secretly tasked by the government to find out.
The general assumption was that you would probably want to be exactly at one of the two poles of the flip axis. That way the tidal forces, and hence tectonic and seismic upheaval, would be minimized. But where was that exactly? And when?
One could reasonably expect that the flip axis would be somewhere on the equator, but that turned out not to be the case. Detailed gravitational maps made by both the Soviets and the US had shown that the Earth's mass displacement was highly irregular and so the potential flip was not quite as neat as a wing nut's. Computer models of Earth, distorted to accentuate local gravity, reveal the planet to resemble something like an organic potato that has had a rough life. Unlike Dzhanibekov's ball of modeling clay with one hex nut, the Earth was more like a lump of clay with three hex nuts. The three "hex nuts" were the Greenland ice sheet, the West Antarctic ice sheet, and the South Asian high mountain region. The relative melt rates due to global heating of all three of those would become crucial in determining the exact characteristics of the flip.
The polar ice caps contain about 2.6×10^{16} tons of ice, but since most of this mass is located close to the rotational axis, its contribution to Earth's moment of inertia is negligible. The Greenland ice sheet, on the other hand, is the largest body of ice in the world after the Antarctic ice sheet. The gravitational mass of Greenland is so huge it actually raises the sea level around the coast by a few meters, simply due to gravitational attraction towards the interior. With enough melted ice in Greenland to raise global average sea levels by 7.2 meters, Earth's inertial mass is highly asymmetrical relative to the spin axis.
At that time most scientists naively assumed that it would take centuries for the Greenland ice to melt, even at accelerated levels of global heating. But there were two crucial factors they were ignoring. The first was the Methane Dragon (which they either didn't know about or refused to give it credence), and the second factor was the dynamics of how the Greenland ice melted.
Most models considered the ice to be more or less a homogenous lump, basically a large ice-cube, with a thermal boundary at the surface. Viewed that way it resembled the 19th Century cargo ships which used to happily transport large blocks of ice all the way from the east coast of the US in winter, right across the Equator and on to South America where it was high summer.
The ice trade worked because as you increase the volume of a block of ice, the volume goes up by the cube, while the surface area only goes up by the square. Since the melt only really occurred through the surface, the bigger the mass of ice, the less you had to worry about it melting. So packed with straw, you could transport a large mass of ice from one hemisphere to the other by ship without having to worry too much that you would arrive at port with a hold filled with nothing but fresh water. But imagine how far you would get if you chopped the ice

up into cubes and tried to transport it in cocktails! Well that's a closer analogy to how the Greenland ice sheet actually is.
What many scientists didn't know was that as the Greenland ice sheet melted, it was causing the remaining ice to get denser. The denser ice was in the form of giant slabs, and the slabs were sloughing off as the melt water worked its way between them, lubricating them like the meat filling between layers of pasta in lasagna. These areas were growing into ever larger "runoff zones". Glaciologists who knew about it were starting to refer to it as terrifying. And that was not even taking into account the world after the Methane Dragon had roared.
Scientists had said over and over again, "the Greenland ice sheet cannot melt overnight. It would take hundreds of years, maybe even thousands."
They couldn't have possibly been more wrong. It didn't have to melt. It just fell apart structurally like the twin towers on 9/11. They were thinking high-school Physics when they should have been thinking Structural Engineering 101.
In 2019, researchers at Hokkaido University, working as part of NASA's Operation IceBridge, announced that they had discovered a river under the Greenland ice sheet. Since it was about 500 meters below the ice, they named it the Dark River. Meltwater was draining from central Greenland to the northern coast in complete darkness, in a river that was possibly as long as the Ohio River.
The Greenland ice sheet was not by any measure a solid block of ice.
Dean was taking all of this into account. Some scenarios placed the Earth-flip mere months after a potential clathrate eruption (assuming it was big enough). Although no one knew it at the time, at the turn of the millennium the flip was already poised on a hair-trigger. Even without the Clathrate gun going off, it was likely that, at the runaway rates of warming expected based on the Belt and Road Initiative alone, the flip would happen sometime before 2050.
Finding the exact geo-coordinates of earth's flip axis turned out to be like trying to catch a falling knife in your bare hands. Up until the first decades of the 21st Century there wasn't really enough computing power available to model it with any great accuracy. There were a stunning amount of variables to take into account, and getting it wrong would come at a high cost. You definitely wouldn't want to be anywhere near the equator of the flip axis during the event – even in a boat! Some calculations predicted that there would be strong atmospheric sheer forces and extremely high winds.
Some of the vexing questions at the Office of Net Assessment were things like, "How much influence would normal lunar tidal forces have on the event", and "would you have to know the exact time of day of the flip in order to determine longitude of the zero points [northerly and southerly points of the flip axis]"
There were two schools of thought on the matter. One said basically, "Who cares? The Point of Greatest Survivability (PGS) is just anywhere on earth where you are far away from geographic fault lines, volcanoes and tsunamis."
The other school of thought said that it might be possible to determine the exact flip axis, and the PGS would be at one of the two poles of that axis, because that's where the dangerous tidal forces would be felt least. In theory it would be like sitting happily at the hub of a merry-go-round, watching all the other kids suffering chaos round the edges. A splinter group in this faction became known rather derisively as

the “Biblical Hopefuls”. They argued mainly from the perspective of historical precedent (like Velikovsky). They discovered that the Harris Magical Papyrus, housed in the British Museum, stated that there was once a cosmic upheaval of fire and water. It said that "the south becomes north, and the Earth turns over."
The Ipuwer Papyrus also stated that "the land turns round like a potter's wheel" and the Earth onced turned completely upside down.
The Biblical hopefuls’ assumption was that the flip axis is probably about the same every time. Therefore, if Noah (or Gilgamesh, Ziusudra, or Utnapishtim in the parallel Sumerian, Akkadian and Babylonian myths) survived and got washed up on Mount Ararat, or thereabouts, then in order to have survived he must have been roughly at one of the poles of the flip axis. So according to this logic, the Northern pole of the flip axis must always be round about where the Caucasus Mountains are (or where the Black Sea is today). This was actually backed up by human genetic studies, which seemed to indicate a huge population bottleneck in that region about 10,000 years ago. Most European men descend from a handful of Paleolithic forefathers - about two thirds of modern European males can trace their ancestry to *just three men*!
As to the corresponding Southern pole of the flip-axis, it would be somewhere in the South Pacific, East of New Zealand (which may explain why some Aboriginal tribes in Australia survived to pass down their own flood myths).
It turned out later that the Russians came to a similar conclusion independently, simply by crunching the numbers and then realizing as an afterthought that their numerical conclusions corresponded closely to the Biblical myth and other cultural sources (particularly the pervasive universal flood myths in many ancient cultures).
As soon as the Soviets started thinking in terms of a catastrophic Earth-flip, they almost immediately started solving longstanding geophysical mysteries – like what causes periodic ice ages, what killed off the megafauna in North America and why Antarctica has plant fossils. Not to mention minor mysteries like how the Piri Reis map (compiled in 1513) seemed to show Antarctica as an ice-free continent when Antarctica itself was supposed to be unknown before 1820, and its ice-free contours were only determined by ground-penetrating radar in 1958.
At least, that’s what Charles Hapgood thought in the Sixties – though it wasn’t well received by scholars. Still, there were persistent theories that at some recent period in prehistory the Antarctic must have been ice-free. For one thing, Antarctica had a green past – 280 million year-old fossils of forests have been found there. Before the Permian-Triassic mass extinction (the one that killed off about 95 percent of Earth’s species), giant trees of up to 40 meters grew in Antarctica. Scientists believed that the mass extinction was driven by massive greenhouse gas emissions from volcanoes, which raised the planet's temperatures to extreme levels and caused the oceans to acidify. The strange thing is that even if you take continental drift into account, 280 million years ago Antarctica was already at about the same latitude it is today. So it was mysterious how dense forests of tall trees could survive the weak 24-hour sun in summer and the complete absence of sun in winter.
Except the Soviets realized that if Permian-Triassic mass extinction marked an Earth-flip event, then perhaps the Antarctic was once not so far south after all.

Perhaps the trees actually once grew at the more temperate latitudes closer to the equator.

You were probably taught in school that Ice Ages are caused by Milankovitch cycles – basically by variations in the eccentricity, axial tilt, and precession of the Earth's orbit, with a bit of variation in solar radiation thrown in to account for the fact that Milankovitch cycles are about as successful a theory as the Medieval pseudoscience of Ptolemaic Epicycles, which was used to explain the motion of planets (in a supposedly Earth-centric solar system). In other words, the theory didn't work very well, but no one had any better explanations.

Milankovitch cycles are too linear to explain the nonlinearity of Ice Ages. Artifacts show that the variation in Earth's climate is much more extreme than predicted by the intensity of solar radiation changes in Milankovitch's model.

However the Russians discovered that through the lens of Earth-flip events Earth's temperature record suddenly seemed to make a lot more sense.

Broadly speaking, in cartoonish terms, the gyrations in historical temperatures have been due to a pattern whereby volcanic activity throws huge amounts of carbon dioxide into the atmosphere and cools the planet due to solar dimming from volcanic dust.

You have probably heard about how the 1815 eruption of Mount Tambora caused the infamous "Year Without a Summer" in 1816 and caused William Turner to paint his skies dark red. The volcanic winter following that event caused major food shortages across the northern hemisphere. More recently, in 1991, the eruption of Mount Pinatubo blocked the sun enough to drop global temperatures 0.5 digress for about 2 years.

After a period of cooling from a kind of "volcanic winter", earth becomes dangerously heated due to greenhouse gasses emitted by the volcanoes. Plants gradually take advantage of the higher concentration of carbon dioxide and start cooling things down due to their respiration, which draws carbon down out of the atmosphere. For example, fifty-five million years ago, Earth was in a near-runaway state, probably heading towards a sterile planet like Venus due to excess greenhouse gases caused by volcanoes. The Arctic was a hot lake back then, more like the Dead Sea today, and a small-leaved aquatic fern called *Azolla* took root there in the excess nutrients and saved the climate. Azolla grew so well it caused the global greenhouse effect to decline to the point that it caused the ice sheets at the poles today. This is known as the Azolla event, and if you are wondering why the people that framed the Milliways doctrine didn't just propose we cover Earth with Azolla to avert climate catastrophe, that's because humans need space for agriculture, and no one can figure out how to feed nearly eight billion people on Azolla (while still having it act as a carbon sink). It tastes like grass and has the nutritional value of celery. And the same goes for trees, by the way, in case you are one of those people who naively think collapse can be avoided simply by planting fuel for forest fires on a large scale. You can't dredge up the entire Carboniferous Era and put it into the atmosphere of the Holocene and then think you can get away with it just by saying you're sorry, becoming vegan and switching to "renewable energy". Things are a little more complicated than that.

What the Russians assumed was that as plants drew greenhouse gasses out of the atmosphere, they caused the Earth to cool enough for ice sheets to form, which worked against itself by reducing the vegetation due to the freeze. Yet before the Earth got cold enough to kill off all plant life, the ice caps changed the Earth's intermediate moment of inertia enough to cause an Earth-flip event. The resulting volcanic disruptions associated with the catastrophe caused a temperature rise (after a brief freeze and volcanic winter) and then the cycle repeated itself. The geological record seemed to bear that out.

Research showed that if one assumed that artifacts collected around the globe were more a representation of the local temperature rather than a record of average temperatures around the globe, then a pattern emerged that seemed to correspond with periodic geographic pole reversals right up until about 12,000 years ago, when the temperature flat-lined remarkably (presumably allowing for sedentary living and a stable enough climate to allow agriculture to thrive for the very first time in human history).

The last Earth-flip seemed to coincide with what's called *The Younger Dryas* period (around 12,900 to 11,700 years ago). The Younger Dryas is considered the archetypal millennial-scale climate change event, but up until that point it was a mystery as to what caused it. Some had suggested that a comet strike, or a melt water pulse, must have been responsible, but none of the physical evidence seemed to support that. Most of the evidence seemed to finger volcanic activity as the cause, and now the Russians thought they knew why.

It's worth noting that dozens of large mammals, or megafauna, such as mammoth and mastodon, disappeared in North America around this time. 52 mammal genera also went extinct in South America and the mega-fauna in Southern Africa also died out.

The name "Dryas" comes from a little alpine-tundra flowering plant with pretty white flowers, called *Dryas octopetala*. Dryas octopetala is suddenly found in the geological record all over the northern hemisphere after 12,900. The Younger Dryas must have been a severe interruption in the gradual warming of Earth's climate that had been happening since about 27,000 years ago. It marks the boundary between the Pleistocene epoch and the warmer Holocene epoch. Which is the current epoch, though it may be renamed to the Anthropocene to reflect the impact of mankind (Anthropos, in Greek). In which case the Anthropocene is likely to be the shortest epoch of all – followed quickly by what promises to be the longest and perhaps final epoch on Earth: *The Necrocene Era*.

Just before the Younger Dryas, the massive Laurentide Ice Sheet in North America destabilized the Earth enough to flip it as the ice melted. The seismic and tectonic shifts caused at least the Laacher See volcano in Germany to erupt (as it probably will again during the next flip). The resulting freeze from global dimming (aerosol cooling) probably only lasted for about 1-3 years. Its onset was so sudden that carcasses of the woolly mammoth and rhino found in the northern regions of Siberia and Canada revealed stomach contents full of plants from warm climates, and yet they had frozen to death before their food could even be digested. Thousands of animals have been found frozen in a brief instant of geological time this way.

That humans survived this period is a miracle, and it's not too much of a stretch to imagine that any refugees from this event may have given rise to folk legends of heroes like the Biblical Noah surviving the Great Flood. What followed soon after, about 11,600 years ago, is the construction of the astounding Pre-Pottery Neolithic temple at Göbekli Tepe in Southeastern Turkey, about 500 km from Mount Ararat. It's worth noting that Göbekli Tepe is at the town of Şanlıurfa, which is the *Urfa* or *Ur Kasdim* mentioned in the Bible as the hometown of Abraham, the common patriarch of Christianity, Islam and Judaism – the so-called "religions of the Book". It's also the holy town where the Armenian alphabet was invented.

From there modern civilization seems to have taken off, thanks to a remarkable and unusually stable period of the climate that lasted up until humans destabilized it again with the Industrial Revolution.

The Russians secretly came to the conclusion that the reason global average temperatures had been so stable, particularly for the last 5,000 years, is that human activity (especially things like rice farming) was competing against the next Ice Age. The flat line in the temperature graph (really for the last ten thousand years) was because the longer stable temperatures endured, the more human agriculture flourished. And the more it succeeded, the more deforestation occurred and the more methane there was to compete against the coming Ice Age. Mainstream anthropologists assumed that the remarkably stable global temperatures of the Holocene epoch (what climatologists call the *Climatic Optimum*) gave rise to human agriculture, but actually it was the other way round. It was agriculture (and the continual removal of wild vegetation and deforestation by humans) that gave rise to flat temperatures. Although people were unaware of it, human agriculture was acting as a dynamically stable governing mechanism that was operating through climatic feedback.

So human activity was keeping the temperature stable at a steady limit until the Industrial Revolution came along and completely upset the balance, which will no doubt shortly overturn the whole applecart (assuming that's an appropriate metaphor for an Earth-flip).

America was far behind Russia in this (classified) line of research, but when they caught up, their superior computing power allowed them to calculate that the flip axis was not quite in the Caucasus, as the Russians thought.

As Principle investigator for the parallel research project in the US, Dean found a robust conclusion that the exact northern pole of the flip axis was further west – *at the exact coordinates of the island of Nisos Agios Nikolaos, to be precise*.

By the end of the project he was openly sharing this information with me, and when he submitted his final report, we made a decision that we both knew could get either Dean, or perhaps both of us, into seriously hot water later on.

I think that while Dean was working on the project the inherent elitism of it all must have finally got to him. It was obvious that the results of his research, although paid for by the taxpayer, were never intended to benefit the average Joe.

At bottom, the information was really intended to save an elite few. The knowledge contained in his report amounted to a lifeboat, or ark, intended exclusively for the benefit of the higher ups and their kin. It was an abuse of power, because they obviously never intended to share the information that the Earth was shortly about

to flip, much less give out the information that the best place to survive would be either in Nisos Agios Nikolaos in the northern hemisphere, or somewhere about 2,000 km East of New Zealand in the southern hemisphere. It was clear that they were going to use the information for their own personal benefit (and that of their rich cronies), and the rest of the human race could go to hell as far as they were concerned.

In retrospect, the global power brokers probably almost willed a mass die-off of the human race, in order to preserve those they considered most worthy: *themselves*. I presume that, in their eyes, the looming catastrophe had all the hallmarks of a kind of ritual cleansing of the planet. At the very least, it was the ultimate solution to the *Civilization Trap*. The problem itself was the solution.

In a way, it vindicated James Lovelock's Gaia hypothesis – the Earth system *was* self-correcting. Though perhaps more in the way of an abrupt reset button, not in the benign and gently spiritual way that hippies generally thought. It turned out Gaia was a bitch.

In the eyes of high and mighty, anthropogenic climate change itself would destroy everything, so that the green shoots of re-growth could emerge, Phoenix-like from the ashes, and the cream of the human crop would start over. Those with foreknowledge of the precise details would be the chosen ones, and they were not likely to share that knowledge very widely.

I guess Dean felt that the little people, like him and me, were being used, because we were the serving staff permitted to know, or guess, the Deep Establishment's plans, while obviously having no part in them. Underlings were just supposed to keep their mouths shut, lump it, salute the flag and die gracefully without complaint while dutifully in harness.

The injustice of it all was that the rich and powerful had contributed more to Climate change than anyone else, and now they obviously intended to use their privileged position to allow them and their families to escape the consequences, at the expense of everyone else. So Dean decided on a risky gamble: to stick it to them as best he could under the circumstances.

He knew that his report would not be the only one used to make the final assessment about the PGS (the Point of Greatest Survivablity), but he also knew that the Pentagon put more store in number crunching and numerical models than anything else, and more store in him personally than was probably prudent. If he double-crossed them, he knew he would eventually be found out, but I presume he figured that at least he could cost them time, or at least signal his disgust and outrage to them, even if it only turned out to be a minor trifle for them in the bigger scheme of things.

So Dean asked me to do a little clandestine side project after hours. He wanted me to code up some genetic algorithms that would subtly tweak the datasets he was using in his models. The idea was to find the absolute minimum and most unobtrusive fudge to the data so that the models would place the PGS somewhere in North America, closer to the equator of the flip axis, rather than the true spot in Agios Nikolaos. He suggested I merely exchange signs on a handful of the variables, from positive to negative and vice versa, in the datasets containing the bulk of the numerical measurements and see what happened. It was too risky to allow me to

actually have access to the live data, but I didn't need that in order to write the programs. I simply handed the programs over to Dean and he had the necessary access to run them on the real data.
Pretty soon he came back in great excitement. "It's perfect!" he exclaimed. "Great job Hugh! It turns out if you just flip the sign on about three data points the models place the PGS right here – right at 38° 44′ 33″ N, 104° 50′ 55″ W. You'll never guess where that is!"
"Wait," I said. "Let me check on my phone."
I zoomed in on the map and burst out laughing.
"Holy shit! The Cheyenne Mountain Complex!"
"Do you think they'll fall for it?" he asked.
"Will they ever," I said. "It's perfect. If anything, maybe too perfect. More like poetic justice!"
So Dean doctored all the data, and all the backups, and tried his best to cover his tracks. And the rest of the investigators who lent their names to the final top secret report either silently played along, or were unaware that Dean's slight of hand had shifted the PGS from one of the best places to be to one of the worst. One place you definitely wouldn't want to be in an Earth-flip event is anywhere near North America. For one thing, just as in the *2012* movie, Yellowstone would almost certainly blow, along with Mount St. Helens, Mount Rainier, and Mount Shasta (at the very least). Not counting the megatsunamis, fires and extreme earthquakes America was likely to face, there were also 98 nuclear reactors in 30 U.S. states, which would all undoubtedly melt down. There were also the harmful effects of vast stores of fissile materials, caches of chemical, biological, and radiological horrors to consider. Finally there was the sheer size of the continent, which would mean that the coming extreme temperature variations would be significantly amplified in the continental interior. As the centers of large landmasses are far away from the moderating effect of oceans, in some cases the effects of climatic temperature anomalies, both hot and cold, might be more than doubled inland. The long-term odds of surviving in somewhere like Colorado were not great, but Dean's report included Megatsunami maps and Maps of Catastrophe that made Cheyenne Mountain appear to be a good place to be in what the Elites called "The Event".
Our data tampering was so slight that it would probably go undetected for quite some time, but the digital audit trail left behind would mean that if anyone suspected anything, the ruse would be uncovered in short order. Still, there was some protection from immediate discovery because of the ultra secret nature of the whole subject. The number of people involved was highly restricted and very siloed, which meant that the knowledge base was highly concentrated and therefore less likely to come under broad scrutiny.
However the jig was obviously up the day *Liberty* sailed into Agios Nikolaos.
By the time Dean had finished telling Anna this story, the sun was just slipping behind a peak. We sat down at the side of the trail and looked out to sea through the tall pines and over to the boats peacefully at anchor in Ormos Aetolofos. It was a breathtakingly beautiful setting.
Dean and I sat in silence waiting for Anna's reaction.

She got up and walked to the edge of the trail and stood thoughtfully with arms folded, gazing a long way off.
Finally she turned and said, "Wow."
"'Wow'?" said Dean. "Just 'Wow'?"
"Just 'Wow' … and fuck you, you bastard!" she said. "You mean Hugh has been more of a confidant to you this whole time than your own wife?"
"What can I say, Babe?" said Dean. "You know the deal. You've always known the deal. Working for the government is … *it's Chinatown, Jake*."
Suddenly Anna burst into tears. Dean went over and took her in his arms.
"Oh my god, this is such a nightmare!" she wailed. "Do you swear this is all real?"
"I'm afraid so, sweetheart," he said.
She stayed there for a while just swaying in his arms, sobbing with her head on his chest. Finally she dried her eyes and blew her nose.
"It's okay," she said. "You're forgiven. I'm just glad I know now. Everything finally falls into place."
Staring out to sea she said, "Are you sure you are talking about this … this great big ball, this huge globe out there …and not just one of your computer models?"
"It's strange," said Dean. "But this is it – this is the one and only. I think it's unique in the entire Universe. And so are you."
"You're full of shit," she said. "You know, when I look at it, really look at it – at the clouds, the birds, and the trees, and the mountains, and the sun, and the sea – I can see it. I can just about imagine that it can really happen. It's kind of awesome. It's majestic, and it's magic, and it's epic. It's almost a relief in a way, because the world is so obviously going to shit. It's so depressing, and bad as this is, it gives me the first sliver of hope I've had in ages. There really might be a Black Swan out there after all."
And then she turned to me and said, "Come on over Hugh. I want you and Dean to promise me something."
So I went over and we clasped each other in a group hug, and Anna said earnestly, "Dean, Hugh, we *must* survive this. We *must*. Promise me both that we will. We can, and come what may, we *will*."
At that point, I must admit, I blubbed. I could scarcely believe that someone could be that brave at such a time.

Cp. 7. Seven Amigos and the EPFCG

In order to lie low and keep our distance, I stayed in the harbor to keep an eye on *Liberty,* and *Pizzazz* took a circuit round the Ionian with automatic identification system (AIS) switched off and batteries removed from cell phones. As an added precaution, Dean kept the batteries in the microwave oven because it makes a good electromagnetically isolated Faraday cage. You may be surprised what gets routinely smuggled into a seemingly harmless commercial battery these days! Occasionally they checked in with me through a reasonably secure messaging app, bearing in mind that no commercial encryption is safe from "Five Eyes" surveillance and a cell phone itself is virtually an electronic ankle-bracelet for Big Brother to track citizens.

Dean and Anna told me they were going to keep a low profile in Aetolofos Bay for a while, which meant that the bush telegraph on the island instantly knew where they were, although "Jo & Joe" were not likely to be dialed into that.

It soon transpired that Antonis, Theo from the taverna where they did the XR talk, and Greek-Anna found *Pizzazz* via the grapevine and started walking to meet them on a regular basis, keeping them supplied with food and wine from the village. Not forgetting a steady supply of their favorite orange cake from the bakery!

At some point George started to get worried about his daughter and came to my boat. "Captain," he said one morning at the bottom of the passerelle, "Can I come aboard?"

"Of course, George. Come aboard. And call me 'Hugh'!"

I guess out of habit George never referred to me by my given name when I was aboard my boat. It was always "Captain".

George confided to me that ever since our discussion at Easter, Antonis and his daughter had been skipping work preparing the restaurant, and Theo was making no signs of opening his taverna for the season. "Something is up," he said. "Do you know where they are?"

"They're probably in Aetolofos Bay on *Pizzazz*," I said. "Should we go there and see? They are out of electronic contact there."

So I went with George in his speedboat, and as we left the harbor I couldn't help noticing Joe coming up on deck and peering at us as we left. Apparently his difficulty with hearing was very selective. Or perhaps that little bug thing in his ear gave him superpowers.

As a precaution I told George to head out as if we were going to Mýtikas. Then we took a circuit the long way round the island to arrive at Aetolofos.

When we arrived we found Antonis with Dean, Theo and the two Annas sitting in the cockpit under a sun awning. The five of them were pouring over some plans and Dean scooped them up as we arrived and furtively bundled them into a chart table. Barcelona-Anna declared that it was time to have some drinks, and so we settled in for a chat, but there was some tension in the air, since obviously George and I were there on business.

"So what's up, fellas?" asked Dean, in a failed attempt to innocently break the ice.
"George is worried about Antonis and Anna," I said, not wanting to beat around the bush. "Maybe we should tell him?"
Dean turned to George. "I'm not sure you really want to know, George. Maybe this is one of those things that's just better not to know about."
"Please," said George. "If there is something going on, I need to be a part of it."
"Antonis, Anna? It's really up to you guys," said Dean. "What do you think?"
Antonis and Anna looked at each other for a while. Then Anna turned to George and said in Greek, "Papa, we have decided to become radicals. We are starting a campaign of drastic action. If we are caught, it will be the end. But we think if no one does anything, it will soon be the end anyway. We have decided it is better this way."
George just sat quietly for a moment, absorbing what she said.
"Do you mind if I smoke?" he asked Dean.
Dean told him to go ahead, so he lit up and started puffing away.
"Is there no other way?" he asked Anna in English.
"We are at the beginning of a Holocaust," said Anna. "Perhaps it is The End. The *very end* of all of us."
"Can you not do something through politics? By voting, perhaps?" asked George.
Anna replied, "The ballot box is a choice they give you. Violence is a decision you make for yourself. Once you are certain the final Holocaust has begun, you know the freedom to act at the voting booth will be limited, and the window of opportunity to act on your own behalf will soon disappear. So it's better to act now and not waste time, because the final Holocaust has already begun. I'm certain of it. And once you know that, you know that it's better to do what you can to make it happened sooner. Because the sooner the collapse, the more the survivors will have left afterwards. So we must act!"
"You are your mother's child," said George. "You remind me so much of her when we were young. You have her conviction. But why don't you just protest through XR?"
"Because it's not enough, Papa."
"XR is really just a political lobbying group for the government," said Antonis. "They are really just liberals with eco-anxiety who want subsidies for the green-tech industry because they are scared of the fossil fuel industry. They don't really want change; they just want to hang on to their privilege. In the end, all they will be is a mutual-support group for hippies during the collapse. No matter how big they get."
"But they are prepared to get arrested for their beliefs," said George.
"Getting arrested for civil-disobedience in Britain or Greece is nothing, father," replied Anna. "They pay a fine and nothing significant happens. But they will just bankrupt themselves that way. The government doesn't care. And even if it did, all they'll do is some big scheme to tax the people more to funnel money into the pockets of the corporations and bankers that created this Holocaust in the first place. It's greed. Pure greed. That's all a Green New Deal is. It's a *Greed New Steal*."
Dean laughed. "*What do we want?* GND! *When do we want it?* As we circle the drain!"
"Getting arrested to make someone else do something for you is just infantile," said Antonis.

"It's arrested development," said Dean. "Pun intended. They've been spoon-fed their whole lives, so they expect someone to come along and fix collapse for them if they just have a temper tantrum. More like 'Extinction Tantrum' than 'Extinction Rebellion'".
"But isn't that the only way to get them to apply science to the problem of Climate change?" asked George.
"No," said his daughter. "Science just provides a candle to light the way for industry. We will go extinct because no one will believe that science and engineering have no solutions. There are no fixes. But people will not let go. Science and engineering cannot help us, because science and engineering are the problem. Things will just get worse from here. The more they try, the worse things will get. They have to be stopped."
"We have to take action ourselves," agreed Antonis. "We want this nightmare to end. The whole world needs to hit rock bottom. We need to act to make that happen. Green New Deals and stuff are just Band-Aids on the wounds of the system. By breaking the system, we can make people loose their belief in it. We have to use force to stop them suckling on the teat of the industrial system."
"What do you have in mind?" asked George.
Antonis and Anna said that ever since we had the conversation at Easter they had been thinking along a new line of activism.
"You remember the fable Dean told us, with the animals on the island?" asked Antonis. "I've been wondering what we should do. And I think I agree with those ants. We have to burn our island in order to save ourselves."
"What, do you mean set fire to the world?" asked George.
"In a way," he said. "Dean, tell me if I am wrong, but what you meant by those ants saying 'we should set fire to our own island' is that in order to save the world, we have to destroy it first. Is that right?"
"Essentially," agreed Dean. "We need to pull down the golden calf to stop people worshipping it. That's the only way to save them. People are addicted to tech society and its comforts and goodies. Governments knew back in the Eighties that people would riot if anyone even suggested that we ban electricity, much less halt the engine of prosperity. The crops we live on now are virtually a fossil-fuel product. Most people in America would literally rather die than give up meat, and life for them would not be worth living without the Internet, cars, washing machines and microwave ovens. But their attachment to these things is literally going to kill us all. The only way out of the crack-habit is for a small number of people to forcibly remove the crack. That means taking direct action against the system itself, and forcing it to collapse before its time. That's the only way there'll be anything left of this planet at the end."
"But people rely on this system to survive," argued George.
"Yes," said Antonis. "Yet it's like the ants said. Think what will happen if we just carry on and do nothing."
Antonis said that getting politicians to tell the truth about the Climate emergency is easy. Getting them to tell the truth about industrial activity and economic growth is impossible.

"Economists and politicians say that we can have economic growth without using more resources and without being environmentally destructive. But we cannot, and that's the truth they refuse to tell. In the end, our species will go extinct trying to prove that economic prosperity can be decoupled from the environment. If we haven't passed them already, then we will pass all the major climate and environmental tipping points while we try to prove the impossible. These people have to be stopped."
"But is this really justifiable?" asked George. "Even if we have the ability to end the system, do we have the right?"
"Yes," interjected Anna fiercely. "If we were on a spaceship and someone went mad and tried to punch holes in the side, you would have every right to shoot them to save yourself and the other passengers. It's self-defense. Even if ninety-nine people were banging holes in the ship, and you were the only one that saw the danger, if you could not get them to stop, then you have the right to shoot them. And Earth is like a spaceship that's being destroyed by mad people."
"Maybe if just ninety-nine people were going crazy," said George. "But do you have the same right with everyone on Earth? Can you take justice into your own hands that way?"
"Why not!" flashed his daughter. "If it's a matter of our survival, it's not a matter of democracy. If the majority decides to kill itself, then the minority has the right to resist. If they want to jump in a fire, let them. But they are dragging all of us into the fire with them."
George sat blowing smoke for a while as he mulled it over.
Theo spoke up. "You know there is more to consider than just people. What if all the plants and animals on Earth had a vote? If they voted for their survival they would outvote us humans who are killing them. And they are in the majority."
"You make a good point," said George. "Anthropos is not everything. All life deserves a chance."
"Exactly," agreed Barcelona-Anna. "We are too bloody anthropocentric by far!"
"But I still don't know if it's just," mused George. "Think of all the children! Think of the innocents!"
At that point Dean pointed out that In terms of net gain (births minus deaths), we were adding over 220,000 people to the planet every day. Every minute that ticked by added 150 people.
Dean said: "According to the United Nations, the global population is projected to grow to about ten billion by 2050. At that point civilization will likely collapse and most children in the world will die horribly from malnutrition and disease. Perhaps all of them. So if your argument is that you want to prevent children suffering, the sooner we act the better. Every decade we wait adds another billion people to a life of hell."
Greek-Anna added, "There is another thing to consider when it comes to justice. Privileged rich people love to talk about 'Climate justice.' But 'Climate justice' is not just throwing money at the poor so they can aspire to your way of life. Think of the San people in Southern Africa for example, or the Pirahã people in the Amazon, or the aboriginal inhabitants of Australia who are still living a traditional life. What did people like them do to cause Climate change? Filthy 'green' debt-currency cannot

repay them for the priceless wilderness we took from them. Giving them our money is not justice. Justice is if we deliberately collapse the economy and the extractive, eco-genocidal, infinite-growth civilization that stole their land from them. If you think about it, if the whole system collapses, it's the rich people in the cities who will suffer the most. But they are the people who caused the problem. If you need electricity to survive then you are the one with blood on your hands. So if we act now to end the industrial world, then the guilty will suffer most, and it will be a relief for those decoupled from civilization, and the global poor who contributed the least to Climate change. That's 'Climate justice'! But if we wait and do nothing, the rich will eat the innocent on the way down. While the system lasts, their money will protect them until they are the last ones left standing. In the end, even if a single indigenous person survives, they will have no habitat left to survive in unless we end the system now. Who do you want to survive - the sophisticated rich people in China and the West, or the indigenous people in Africa and the Amazon? If the rich people from the cities survive they will just recreate this mess as soon as they can, and we will be back where we started. But if only the San people, and the tribes in the Amazon survived, or the unsophisticated people in Borneo and Australia, then the human story could go on for another million years or more. Perhaps it will go on forever. But that can only happen if the meek inherit the Earth. And only if the people who are destroying it die off first."

"My God," said George "How did we get to this nightmare?"

"With a lot of hubris and arrogance," I said. "And there's no end in sight. They'll start geo-hacking next."

"But we are ants! We here on this boat are just ants! What can we do?" argued George, stubbing out his cigarette and draining his wine.

"Funny you should mention that," said Dean. "Because we were just discussing that when you arrived. Actually there's quite a lot we can do. So if you are looking for excuses to duck out, now is the time!"

"Never! I'm in," said George. "Thrásos!" he yelled – the wine possibly going to his head. "We need guts! We are Greeks for God's sake. And you, my friends, are all honorary Greeks. If we are going to die, then we are going to die like Leonidas' doomed warriors at the Battle of Thermopylae. That malaka Xerxes had better watch out for us! So, Dean – Mr. Fox - show us the way forward! Tell me your story! And may the best Pygmy in Africa survive to tell our story!"

"Bravo! This is a man who does not intend to go meekly into that good night," laughed Dean.

So Dean began by asking us to first imagine the immensity of the problem we were up against.

He pointed out that oil tankers moved about 2 gigatons of oil per year and that increased at the rate of about 100 million tons per annum. Airlines carried 4 billion passengers on scheduled air services every year. There were 1.5 billion passengers in Asia alone, and that figure was increasing at the rate of 10% per year. This was all financed by $6.6 *trillion* per day in trades on the foreign exchange markets.

"And all of that has to stop dead if we are to halt the 36 gigatons of CO_2 that are pumped into the atmosphere every year as a result," Dean said.

"It's impossible," said George. "Like I said, we are just ants. What can we do as individuals? We are less than ants when you think how big the problem is."
"But appearances may be deceptive," said Dean. "I'll give you some examples from World War II."
Dean told us that deep below *Grand Central Terminal* in New York there's a secret power station called *M42*. It's not documented on any plans, and its very existence was only acknowledged in the late Eighties. The public still does not know its exact location. But M42 was so secret that you could have been shot on site if you went near it. What's so special about it?
Well, during the great mobilization for D-Day, M42 powered most of the New York Central Railroad. Wartime planners estimated that if enemy spies had managed to sabotage it, then the troop trains streaming towards the East Coast would have all been halted. Nowhere but New York could have handled such a large human migration.
Now it turns out that the company that had made the original electrical converters for M42 had gone out of business, and there was no equivalent factory or machine shop left in the US to replace or fix equipment of such huge size. If M42 was sabotaged, it would take so many months to repair that the window of opportunity to make the D-Day landings in Normandy during 1944 would have closed, and the invasion of Europe would have had to be postponed a whole year. That would have probably cost the Allies the war.
Dean said: "The interesting thing is, essentially, all it would have taken to sabotage the machinery was potentially just a handful of sand poured into the gears. So, for a while, all that stood between the Allies and defeat was theoretically just a few coat pockets full of grit."
It turns out that the Nazis knew all this, because someone who worked at the station defected to Germany and told them. Hitler actually sent four saboteurs to the East Coast via U-boat on a mission to destroy M42, but they were narrowly intercepted. Two were executed and two were imprisoned in the US until 1956. Yet it demonstrates how history often hangs on a thread, and if you know the threads, history can be changed.
"Here's another example from the war," said Dean.
All the machinery of modern warfare requires ball bearings. The Luftwaffe alone used 2.4 million ball bearings a month during the war. Nearly two thirds of Germany's ball bearing production was concentrated in Schweinfurt in Bavaria. The allies took great risks and paid a high price to bomb the factories there. The airstrikes on Schweinfurt are often characterized as unsuccessful, but nonetheless they caused a 38 percent drop in ball bearing production. After the raids, German armaments minister, Albert Speer, said, "we anxiously asked ourselves how soon the enemy would realize that he could paralyze the production of thousands of armament plants merely by destroying five or six relatively small targets."
Speer said that if the allies continued the raids for a while longer, the machinery of war in Germany would have quite literally ground to a halt. If the Allies could have afforded the casualties to aircrews, a few more aerial attacks on Schweinfurt would have ended the war.

Dean told us that what this demonstrated was the importance of systemic bottlenecks. The global economy of 2020 was a much more highly integrated entity than even the German war machine of eighty years ago. A breakdown in one small part could reverberate through the whole system, potentially bringing the whole house of cards down permanently. Dean said that it was just a question of finding the most sensitive points of dependence, and eliminating them.

"Essentially through greed, or what Capitalists like to call 'efficiency', the industrial complex of today has been made exceedingly brittle," said Dean. "JIT, or just in time manufacturing and just in time delivery, mean that hardly anyone keeps any inventory anymore. And the Capitalist monopolies mean that there is hardly any redundancy. So the whole supply chain works like a bunch of trapeze artists doing a high wire act, where if anyone slips the whole circus act could come tumbling down. The system is so complex that no one even knows the M42s or the Schweinfurts, because it's compartmentalized and no one bothers to study its vulnerabilities in detail, like you would if you were a war planner or a saboteur. But the whole Jenga tower is probably teetering on one or two blocks, and just a nudge could bring the whole thing crashing down at any time. It just a question of finding the vital blocks."

"I get it," said Barcelona-Anna. "It's a deadlock situation. Breaking just one part of the chain ruins everything, because everything depends on everything else."

"Yes," I interjected. "It's like the traditional folk song *'There's a Hole in my Bucket'*. If you put a leak in the bucket, then Liza and Henry are screwed, because everything in their lives depends on the bucket – even fixing a leak in the bucket!"

Dean said that the problem was how to know the super-crucial nodes in the global industrial system.

He said, "I'm sure there are mavens in the shadows that know they are sitting on one or more of the Master switches. But the question is, how do we get them to defect? How do we get them to declare their insights to us?"

"Perhaps a movement like XR could do it," offered Greek-Anna.

"Maybe," said Antonis, "They started a website they called a 'whistleblower gateway' … *truthteller.life* …or something. They said it was for reporting efforts to withhold the truth, the scale of the threat and the fragility of our global systems. Maybe something like that could be used to publish a target list."

"Oh, I get it. You mean allow people to doxx bottlenecks and vulnerabilities in the global system for attack while pretending to be good citizens reporting potholes in the road so they can be fixed," said Dean. "It might work. Maybe that's something to bear in mind for the future, because I think for the moment we could ID a few vulnerabilities ourselves."

"Like what?" asked George.

"Well," said Dean, "All the logistical network, the transport of billions of tons of fossil-fuel, all the airline travel and transport, all the maritime transport, and all the foreign exchange markets to pay for it, are backed by a surprisingly centralized data centers and trading hubs."

Dean said that when DARPA designed the modern Internet, they tried to make the computer network as redundant as possible and very decentralized so that it could survive a nuclear attack. So it's still very robust and resilient. Then good old Capitalism and the Surveillance state came and undermined it. For example, the

Five Eyes countries insisted on putting choke points into the global network so they could snoop on the network traffic. So all the digital traffic across the Atlantic goes through ECHELON intercept stations like the one at Menwith Hill in England and the traffic from Europe to Africa is funneled through listening stations on the extremely hollowed out Rock of Gibraltar. So it was no surprise that in 2018 all it took to sever ten countries in Africa from the Internet was a single ship dragging its anchor. State paranoia has in effect made the Internet vulnerable to physical and cyber attacks simply by being overreactive.

Dean said that the global economic system had too many moving parts for it's own good. The trick of free market Capitalism has always been that it creates problems to which the only solution is ever more government oversight or growth of the free market system itself, but usually both. Managing the system begets problems that can only be solved with more management on a never-ending treadmill. Laissez faire just means a commitment to a never-ending treadmill of growth.

According to Dean, Capitalism's contribution to undermining the security of the system comes from corporate monopolies. "Competition only exists in so-called free markets long enough to decide who dominates them in a winner-take-all game of Monopoly," he said. "So the winners, like Jeff Bezerk or whatever that swine's name is, have quietly centralized everything in a surprisingly few digital Schweinfurts. His company has centralized the bulk of the Western world's cloud computing capacity in a handful of hyperscale datacenters that have already been doxxed by WikiLeaks. The billionaire himself swears that they are highly secure and protected from man-made and natural risks. Yet like most oligarchs he doesn't account for what would happen if his own minions turned against the system. The one best hope for this planet is a lone wolf campaign. Especially in China, where Alibaba Cloud Services consumes as much electricity as Australia to power the world's biggest digital market and cloud services platform."

"What would a lone wolf campaign look like?" I asked.

Dean said: "I think there should be a division of labor between an anonymous network of enthusiasts. The first group would be a loose affiliation of people on social media who would surreptitiously doxx potential targets under the guise of being helpful to the government by providing information on systemic vulnerabilities and drumming up popular support for whistle blowing. The second group should manufacture the hardware and software tools for logistical and cyber sabotage in a globally distributed cottage industry. They would be electronic geeks and hackers, hobbyists and professionals who were into 3-D manufacturing, making homemade drones, remote-controlled boats and vehicles etc. They would supply the manufactured war materiel to a third group through anonymous dead drops using geocaching and tribal codes to find them. The third group would do the hardcore underground actions. They would be the lone wolves. The fourth group would provide supporting services - logistical support, safe houses, medical assistance and financial support. Each group would be firewalled off from each other as much as possible, and they would be mutually supporting through a tribal grapevine using codes and conventions to signal to each other, like a secret society."

"I think I get it," said Antonis. "If the police catch someone in the first group, then it's really a stretch to say they are terrorists since they are just trading in information, right?"
"Yes," said Dean. "And since they simply publish information, they can't really be accused of aiding terrorism without compromising their First Amendment rights."
"Great," said Antonis. "The second group – the factories – they are more vulnerable because they may be working with banned materials."
"Yes," said Dean. "But there can still be a division of labor there, since many people might manufacture or Smurf around to collect stuff in small quantities that can then be accumulated by the third group in anonymous dead drops. If the group develops standardized components and publishes open source schematics for software and hardware, then physical devices and software components themselves can be modularized and the penalties for being caught in possession of them is reduced because they are dual or multi-use. The third group, the guerillas, can always do final assembly."
"Theo, are you prepared to be in the Third group?" challenged Antonis.
Theo took a long draw on his cigarette. He blew the smoke into the air and said: "Just try to stop me!"
"Nothing stops lone wolves running in packs occasionally, I guess. I'll join you!" said Antonis.
Theo grabbed his hand in a thumb clasp handshake and then they embraced in a bear hug.
"And the fourth group," asked Greek-Anna. "We just cook and be the nurses for these malakas?"
"You can be in any group you like!" said Barcelona-Anna.
"No," said Anna. "I *want* to be in the fourth group. Someone needs to pick up the pieces and hold this whole thing together."
Dean said, "That's how it worked in Boer War. During the First Boer War, the Boers used guerrilla warfare and rode around in horse brigades doing hit-and-run tactics on the British. The womenfolk on the farms fed them and gave them shelter so they could keep mobile. In the end the Brits lost. So in the Second Boer War they rounded up the women and children caught supporting the Boer irregulars and put them in history's first concentration camps. That enabled the British to win the war, but it gained them the enmity of their own people and the world. So a few years later they had to concede the victory and give in to allow the creation of a republic. In the modern world, I hardly think the state can afford to be rounding people up and putting them in concentration camps merely for providing hospitality services, but who knows."
"The main thing is," observed Barcelona-Anna, "that finances never really have to be funneled through bank accounts or go directly to guerillas, so it's hard for the state to accuse people of funding terrorism."
"Basically it could work like a front – like NORAID in America was used as a charity to fund the Provisional IRA," I said.
"Okay," said Barcelona-Anna. "It looks like the girls are in the fourth group, providing a safety net for you high flyers."
"Okay, this all makes sense, but how do we get started?" asked Antonis.

"If everyone here is onboard, then we can experiment ourselves and build this movement from the bottom up as we go," said Dean. "We can experiment and build on whatever works."
So we set out planning to identify and disrupt a major bottleneck target while acting roughly in four teams as Dean suggested. I think the long-range thinking was that we could try to scale up any successes, scale back on any failures, and otherwise just play it by ear.
"How many lone wolves do you think it would take?" I asked Dean.
Perhaps the wine was getting to him, because he replied: "To bring down the whole shitshow? The entire industrialized world? Depending on the right targets … five hundred I would say, give or take a hundred or so."
"Who wants to be the first to Tweet #500LoneWolves?" giggled Barcelona-Anna.
"Not yet!" said Dean. "Anyway, it looks like that kind of thing would be the responsibility of George and Hugh's group, right? I assume that's the role you two would want to caste yourself in?"
"Suits, me," I said.
"Sure," said George. "Why not put the guy with dyslexia to handle social media. It makes perfect sense! But, no, I like it. It appeals to my sense of irony. However, I must all warn you to watch out for Father Chryssavgis. He is a snake like you would not believe. And he knows about everything that happens on this island."
"I guess that leaves me as the lone bomb-maker," said Dean.
"Never before was anyone so well cast," said Barcelona-Anna, kissing him on the forehead as she filled his glass.
By that stage we were all getting well oiled with wine, but I'm usually pretty good at recalling conversations I've had while drunk. The conversation turned to George and me in our new roles as location scouts for insurrection.
I said I knew something about the glass industry, and so I proposed it as a possible target because it was a systemic choke point. Now that may be counterintuitive, because glass manufacturing is a sleepy backwater as industries go. Perhaps for that reason alone it was a good target because few people gave much thought to how strategically important it was as a modern industry. The downside was that most glass manufacturing had moved to China, along with just about every other industry, and China was well insulated. But a significant number of glass plants still remained in North America and Europe because consumer demand was highest there, and glass is heavy, bulky and fragile, so it doesn't lend itself to long distance import-export.
I said that what makes glass plants vulnerable is that most of them run on cheap liquefied natural gas and if they are cut off from a supply of LNG for more than about 24-72 hours, the furnaces not only go out, but the glass melt solidifies and essentially the whole glass factory has to be rebuilt. In the relentless pursuit of short-term profits and efficiency, and with complete disregard for resiliency, gas burners in glass melt furnaces are usually situated under the molten glass itself. They are designed to burn continuously for years, so if a burner went out it probably wouldn't be able to be re-lit again, because it would be sitting deep underneath the lava-like mass of molten glass in the tank furnace. It would be like trying to re-light

a blowtorch underwater, only a lot worse, because the molten glass is about 1400° C.
Glass factories have an emergency supply of about 24-72 hours of LNG, but if that runs out, then the tank furnaces are likely to solidify. Building new ones would probably take months to years.
So consider what would happen if that occurred to glass factories around the world. There are only about 500 glass factories worldwide. If they stopped operating then none of the things that arrive on supermarket shelves in glass containers could be shipped. Consumer products from beer to prepared Bolognese sauce would probably go to waste, because paper or plastic substitutes could not be found before the system collapsed. The religions of JIT and Capitalism means that manufacturers can't afford to keep large inventories of glass containers on hand and there is virtually no slack in the system.
That's just the disruption from a hiccup in the container glass supply. If production of float glass were interrupted, the whole construction industry would halt. Vehicle assembly lines would cease to operate. Without windshields, the aircraft manufacturing industry would have to close down. Fiberglass would no longer be available to make wind-turbines, and the fraud at the heart of "renewable wind energy" scam would be exposed. And finally, the other source of hubris in the Capitalist system, "planned obsolescence", would come to haunt the consuming public as the limited supply of products with intentionally non-durable parts, needlessly ran out. One hardly dares mention Monstanto's terminator seeds.
Dean pointed out that once you had identified a bottleneck target like the packaging industry, then it was worth following the supply chain back to its roots in order to see if there was not a single-point vulnerability (like M42) somewhere along the chain. He said that when it came to glass manufacturing, he knew of at least one weak link in the LNG supply chain – the physically located LNG trading hubs.
The heart at the center of LNG arteries, pipelines and terminals is usually an energy-trading hub. The hub is a central pricing point for the LNG gas network infrastructure. Financial futures and derivative contracts are usually priced from gas delivered to this specific physical location. Dean said that the largest natural gas hub in the world is the Henry Hub in the state of Louisiana in the US. China is establishing vast gas trading hubs too so that it can dominate and set the price benchmarks for Asia.
"How vulnerable are they to attack?" I asked.
"I don't know," replied Dean. "But it's worth looking into. They may have a cryogenic refrigeration unit there, which means the whole place is really just a huge bomb waiting for a visit from *The Joker*. In 2014 an LNG facility in Washington State blew up and the industry regulators and the company are still hiding the facts about it from the public. My guess is that it could have been sabotage."
LNG is just natural gas that has been compressed into a liquid in a process of freezing, called liquefaction, which reduces the volume about six hundred times by cooling it to minus 162° C so that it's more efficient to transport. The industry likes putting out PR videos demonstrating how safe LNG is because you can put out a lit cigarette in a glass of LNG and it doesn't burn. Only the vapors are flammable, but that ignores the fact that once a fire gets hold at an LNG facility, it's virtual

impossible to put out by conventional means. A fully laden LNG freighter has the energy equivalent of about 55 Hiroshima sized atomic bombs. If the cargo warmed up even slightly it would release billions of cubic meters of natural gas that would only need a tiny spark to make history. The only thing preventing that is an insulating layer of nitrogen that is intended as a fire retardant. Dean wasn't sure if this arrangement had ever been put to the test with a few bursts of tracer rounds from a machine gun, but he suspected no one bothered, for obvious reasons. Insurance companies have policy exclusions for that kind of thing.

Following on the theme of a series of attacks from a bottleneck target on down its supply chain, I pointed out that if the glass industry was the focus, then we should immediately follow up with attacks on the refractory material and ceramic industries. In some cases crucial components in a glass furnace (for example gas burner nozzles and air jets) were supplied from a single source and the industry had no backups or alternatives. Crucial refractory materials like molybdenum were also in short supply and single-sourced from highly concentrated and specialized factories. Just as in the case of M42, Capitalism tended to demand economies of scale, which meant that many parts were highly customized, and due to some extreme requirement or other (usually size), were often only available from a single industrial oven that was globally unique, for example. If such a production facility could be neutralized, it would have much the same effect as in the M42 case.

"The other thing to think about is parallel infrastructure," said Dean. "So for example hitting an LNG energy-trading hub and simultaneously hitting the datacenter that supports the electronic trading. The New York Mercantile Exchange backs trade at the Henry Hub. If both of those were taken down together then there would probably be ripple effects through the power grid too. The whole system of circular dependencies would be screwed, just like Liza and Henry and their bucket."

Dean said that the trading centers had gossamer-delicate connections to things like SFTI (Secure Financial Transaction Infrastructure), RMG (Risk Management Gateway) and SuperFeed, so the whole system was very fragile indeed.

He said, "Due to the crooks on Wall Street demanding microsecond advantage in high frequency trading apps so that they front-end trades and skim off profits from the Little Guy, colocations like the NYSE'S datacenter in Mahwah, New Jersey, have to actually monitor the length of network cable between computer stacks so that big spenders can get nanosecond advantages. In that den of thieves, it can amount to profits in the hundreds of billions per year. It's called 'proximity hosting'. They basically auction off the rights to fish from our pockets. No one would support a Greed New Deal if they knew anything about how the scummy system that finances it works."

George said, "You know if you think about it, it generally always comes back to attacking the central markets – the trading places – the *Agora*. What Capitalism has done is to centralize everything in market-trading places, from natural gas all the way to financial markets. And you know what I just realized? Jesus knew that right at the beginning!"

"What do you mean?" asked his daughter.

"Don't you remember? He threw the moneylenders out of the Temple. What we are proposing here is to do God's work! We are driving out Satan!"

“I’ll drink to that!” roared Dean, raising his glass. “Here’s to driving Satan from the marketplaces!”
“Yamas!” said George. “And we must not step back from destroying the marketplaces too, or he will be back!”
Then we got down to brass tacks about how seven little ants could start a secret society that was dedicated to de-industrializing the world by force.
“We lead by example,” said Dean. “We develop a standardized set of tactics and weapons that can be shared anonymously on the web by people who self-organize into the four groups we decided on.”
“But what are the weapons,” asked George, “and who pays for them?”
“Well,” said Dean, “Now you have to decide if you’re serious or not. We were just discussing that when you guys arrived. So if you want to continue on that conversation then you really are complicit. And that goes for everyone. This is your last chance if you want to back out. Anyone?”
Dean looked around, but each person shook his or her head.
“Alright,” said Dean, “There’s no turning back from here.”
He went down to his chart table and hauled out the papers they were pouring over when we arrived.
Dean spread a schematic diagram on the table in the cockpit.
“What’s this?” asked George.
“This is an explosively pumped flux compression generator or EPFCG”
An electromagnetic pulse (EMP) device is something that gives off a short burst of very intense electromagnetic energy much like a lightning bolt. Although non-lethal, it can severely damage communications lines, the electrical grid, electrical machinery and electronic devices.
The phenomenon of EMPs was first discovered in 1962 when the US detonated a nuclear bomb high above Johnston Island during a test in the South Pacific. The resulting EMP unexpectedly knocked out the streetlights 900 miles away in Hawaii and killed one Soviet and six US satellites (including the first communication satellite, Telstar I). Based on this discovery, during the Cold War the US hardened infrastructure to withstand EMPs from nuclear weapons. After the threat passed the dependence on electronics and automation vastly increased, with virtually no direct concern about or protection against an EMP threat.
In April 2019, Glynn Cosker, the managing editor of *In Homeland Security* wrote an article entitled, “*Why President Trump’s Executive Order on EMP Preparedness Is Huge*". In it she wrote: "An EMP itself is not harmful to people, but its aftermath would cause devastating, long-lasting effects that could ultimately kill 90 percent of the U.S. population. Most deaths would be due to the shutting down of our entire essential infrastructure, including financial, medical, communication, transportation, food, water and sewer systems.”
That’s probably a gross exaggeration. The U.S. Air Force hit Iraqi TV and the electrical grid with EMP devices during the “Shock and Awe” phase of the Iraq War and the effects were bad, but not biblical. Along with graphite bombs (a non-lethal bomb filled with carbon filaments designed to short out high-voltage installations and power lines), they were highly effective in knocking out most electrical power in Baghdad. But nowhere near 90 percent of the population died as a result. Although

only 35 of the 700 animals in the Baghdad Zoo survived, the people of Baghdad managed to live for years without a water supply, sewerage treatment plants, pumping stations and generating stations.
In 2017, Hurricane Maria completely destroyed Puerto Rico's electrical grid and years later it was still not fully operational, then in 2019 Hurricane Humberto wiped out 80% of Bermuda's power, but neither case was as apocalyptic as Glynn Cosker might have predicted.
After long years of modeling collapse, Dean's philosophy had hardened into something like: "Those that live by the grid deserve to die by the grid."
Using his diagram Dean explained to us how an EPFCG worked. A small non-nuclear EMP device can be homebuilt using an electrical coil and a spark gap. It wasn't too hard to find DIY EMP devices in videos all over the Internet with views in the millions. Videos describing how to drive massive electrical currents through the coils using DIY supercapacitors were also easy to find.
EPFCGs work by *magnetic flux compression*. In a delightful application of classic 19th Century physics, Maxwell's equations show that magnetic flux is conserved if you suddenly squeeze a coil and reduce its diameter. Due to Faraday's law of induction, such a deformation will drive additional current through the coil. If the squeeze is provided by a high explosive charge around the outside of the coil, for example, then the implosion will translate the energy of detonation into a huge electrical surge. Depending on the setup, the field strength can easily attain 200 Tesla. That's twice the magnetic field strength of a typical White dwarf star. The effect the Johnston Island nuclear explosion had on Hawaii is measured in milli Tesla, or thousands of a Tesla.
"How would we test such a thing?" asked Antonis.
"Testing would have to be done in action," said Dean. "If you experimented with one of these devices you would draw too much attention to yourself, so the testing has to be done during a genuine operation."
Dean suggested that we should start with a target close to home – perhaps something that we could reach by boat.
"The drilling platform," said Greek-Anna immediately.
"Perfect," said Dean. "Then this is what I would suggest. I think we should get hold of two traditional old fishing skiffs. Either salvage some wrecks – they are all over the place – or else steal some that look like they are not being used much. We rig one of them with an EPFCG that knocks out the oilrig and all the tugs, guard vessels and supply vessels that happen to be around, and then we use the other as a command and control vessel to steer the EPFCG close to the target via remote control. When we are finished we scuttle the control boat. We can dress up a dummy to look like a fisherman. Traditional fishing boats won't look suspicious at night and we will be able to get in really close before they get intercepted. We need a place to build them out, though."
"I know just the place," said George. "I have a cousin on the mainland with an empty boathouse. He won't ask any questions and there is a boat ramp we can use at night. With a bit of patience and a few jugs of spare fuel we can get to the oil platform."
There were a few extra precautions to take. Dean said that he should be the only one allowed to enter the boathouse after it had been thoroughly cleaned out. All

materiel was to be cleaned with alcohol to remove prints and all equipment was to be handled with latex gloves, hairnets and bunny suits. None of that would arouse any suspicion in a boatyard at any time of the day or night. Masquerading as a lone wolf bomb-maker, Dean would clean and construct the EPFCG device with materials we sourced for him acting as Group Two in the four-group system. Antonis and Theo agreed that they would act as Group Three to do the actual operation in the boats. The two Annas would then pick them up after the operation and drive them to Antonis' place in Athens while they hid in the back of the vehicle. They would lie low there until the next operation.

Dean said that everything should be as crude and handmade as possible. We should use as much scrap sourced from boatyards as we could. He would build the remote control equipment and do the software for it from small hobbyist single-board computers purchased second hand. The superconductors and coils would be built mainly from scrap and placed in plastic drums. "Nothing looks more normal than barrels on the deck of an old boat," said Dean. "Commercial supercapacitors would be great, but since the really big ones are used in things like EMP devices and nuclear triggers, you can expect a visit from some guys in black suits with dark glasses if you order those commercially. The explosives can just be regular agricultural fertilizer and diesel bombs packed in the barrels around the electrical coil."

There was one final thing that Dean was insistent on. He said that the boats would almost certainly be salvaged and tested for DNA. So he asked if anyone knew a barber near a US military base.

"I know one," said George. "But why?"

"Because I need someone to go there and retrieve a sack full of the hair clippings from out of the garbage."

"Oh, I get it," said Antonis. "So the DNA tests will point to someone in the US military. Hilarious!"

And with that the initial planning was over.

Dean burned all the papers on the barbeque at the stern of the boat, while the two Annas prepared some food. I asked George if he needed to get back home. He said no, because his restaurant was not open for the season yet. "Should you call your wife?" I asked.

"I am a free man," said George. "And besides, there is no cell phone reception out here."

"You should stay on the boat tonight," said Barcelona-Anna. "It's too late to go back now."

The sun was just setting in a blood-drenched sky by then, so we both agreed to stay the night on the boat.

Theo pulled a joint from out of his backpack and passed it round.

I never normally do drugs, but I took a few hits this time and immediately regretted it. The reason I never abuse drugs is because I always tend to go on a bad trip. What happens is that I go to this weird place where reality is flipped back to front. And that's what happened again this time.

The place I go to feels like a timeless place, where me and the six others happen to be for all eternity. We are sitting on a boat in that idyllic bay in a twilight that will

last forever. For me, taking drugs doesn't seem like going on a trip; it seems like *coming back from a trip*. I get the strong feeling that the everyday world, the world of eating, and working, and interacting with people, and crapping and living, and getting older, and occasionally sick, is the actual trip – the dream world. It seems that I descend out of that trippy dream world, and back to reality whenever I get stoned. Coming back down to earth, I suddenly remember that the seven us, lost in time, is all reality ever is or was. It's just seven people sitting on a boat for no reason whatsoever, and we just go on trips occasionally and dream a pipe dream of a life of cars, and jobs, and TV, and the news, and police, and dogs and cats, and old people and airplanes. Us seven are the only people that actually exist. The rest is all a dream.

It's the Matrix really.

Taking drugs is how I feel I flip back out from the Matrix. For some reason it's not a good feeling. Perhaps because I don't want to be one of seven people trapped on a boat, lost in limbo, taking excursions into the workaday world simply in order to break the monotony.

Just as I was thinking that thought I looked at George, and he was beaming and beaming at me, as if to say, "I know exactly what you are thinking" and then he winked at me, as if to say, "I'm thinking it too. It's so weird, this life, isn't it?"

The last thing I remember before I passed out was Antonis.

Stoned as the rest of us, I guess, he insisted that we were all now *Macbeth*.

"Shakespeare was clairvoyant," he said, "and he knew we were coming, because look what he wrote!"

Then he stood at the stern, and read aloud from what the text he had downloaded to his phone:

> If it were done when 'tis done, then 'twere well
> It were done quickly. If the assassination
> Could trammel up the consequence, and catch
> With his surcease success; that but this blow
> Might be the be-all and the end-all here,
> But here, upon this bank and shoal of time,
> We'd jump the life to come. But in these cases
> We still have judgment here, that we but teach
> Bloody instructions, which, being taught, return
> To plague th' inventor: this even-handed justice
> Commends the ingredients of our poisoned chalice
> To our own lips.

And that's all I can remember from that fateful day. At that point I blacked out.

The next day we awoke to find *Liberty* moored brazenly alongside us, with longlines ashore.

Cp. 8. George Meets the Dragon

After we got back the harbor I told George about the issues with *Liberty* and asked if there was something he could do about it.
"No problem," he said. "If they come back to port I'll handle it."
In the following days *Liberty* turned up again in Agios Nikolaos and had an unfortunate accident. A thin line from one of the fishing skiffs for some curious reason happened to find itself strung under the hull and it got drawn into *Liberty*'s propeller and wrapped around it. They suffered a "prop-stop" and some engine damage.
George helpfully suggested to "Jo & Joe" that he had an uncle who was a diesel mechanic in Levkas. The "uncle" looked at the engine and gave them a "special price", even generously providing a free tow to Levkas.
It turned out that the prop wrap had damaged the damper plate on the engine, but George's uncle said he could source a replacement for a good price. Though it would take a while. As it turned out, due to one complication after another, *Liberty* was out of the water "on the hard" for the whole season and we got no more trouble from "Jo & Joe" that year. I marveled at how the Turks must have struggled during their 400-year occupation of Greece!
As the operation against the drilling platform progressed, Dean instructed us on a complicated protocol for carrying cell phones. Whenever he or anyone else went to the "factory" they passed their phone to one of us to carry around. The person with the phone lugged it around with them and passed it on to anyone else in our group they happened to meet. That made it appear to any backtracking surveillance that we were associated with each other, but at least it provided an electronic alibi for the person making a run to the "factory" or other possibly incriminating journey.
While phones were potentially incriminating, Dean insisted that we didn't go without them. He told us that French anti-terrorist police arrested the so-called Tarnac Nine in 2008 on suspicion that a terrorist cell was forming simply because the alleged saboteurs were not using mobile phones!
Any electronic communication we did was done with the knowledge that, as with everyone else, AI bots scanned all Internet traffic before permanently archiving it in an NSA data center in Utah. The ideal was to have a regular flow of innocent-looking messages between us at a cadence that was uncorrelated to the pace of work on the "project". If we needed to pass information it was either done far out of microphone or camera range or by pre-arranged signal – for example, sending a picture of a reptile meant "no"; sending a picture of a cute kitten meant "yes". Sending a picture of something sweet signaled agreement; something sour meant dissent. To signal caution or danger, the prearranged signal was to message a picture of a stinging insect or something with yellow and black stripes. Signaling an emergency was by sending a picture with fire in it (or an emergency vehicle).
If we needed to conference, then we agreed to cover our mouths with a hand and say, "What's the weather forecast for tomorrow?"

Then we would go off to a quiet spot out of range of any microphones of our own or anyone else's phones and have a discussion with our hands over our mouths to prevent lip-reading. Anything incriminating we looked up on the Internet was done over free Wi-Fi in restaurants or coffee shops.
Deliveries were mostly made at night by boat, with all electronics and AIS switched off. We used the ruins at Aetolofos Bay as a staging area and dead drop for supplies and everything that entered the "factory" was washed down with a ten percent Clorox and distilled water solution to remove trace DNA. Latex gloves and disposable polypropylene hairnets were used when handling materials whenever possible.
Dean instructed us that any trip we made that could link us with the operation must be made via public transport if possible (without any personal electronic equipment or clothes that might have consumer product RFIDs in them – which most name brands have). Whenever feasible, any possibly incriminating journeys should be done at night and preferably with cloud cover (to evade satellites). Even when it was not raining, Dean recommended using an umbrella and covering up facial features.
These precautions were taken because in the US and EU most major cities were covered by camera nets with facial-recognition and integrated scene-to-scene person and vehicle tracking. In addition, almost continuous aerial reconnaissance by light aircraft, drones, and satellites allowed for backtracking-surveillance at any point in time from any point on the ground. Greece was a surveillance backwater compared to sophisticated monitoring done in the G7 countries and China, but Dean considered it a forgiving training ground for us to hone our skills and perfect our techniques so that we could train others to use them in highly policed areas later.
At one point, while visiting Aetolofos Bay, I covered my mouth and said, "What's the weather forecast for tomorrow?"
"Looks like a light breeze from the Northwest," said Dean, and we ditched our electronic items and went ashore for a walk.
I asked Dean if we were doing the right thing by keeping the information about an Earth-flip from our Greek compadres.
Dean said that he thought it was important to do everything in our power to try to prevent an Earth-flip if we could. He was worried if we told them they might lose hope and give up on activism.
"Or, on the other hand," I said, "Maybe it would spur them on?"
"You mean put them on 'Death ground' as Sun Tzu would say? Make them fight like mad because our backs are against the wall? What if they just decided to let humanity go to hell and took a chance riding it out here at the PGS?"
"That's their choice," I said. "I mean, isn't that what we're doing? We can't keep them in the dark."
"But what if word leaks out and millions of people start coming here?" Dean mused.
"Why not?" I said. "Maybe that's a good thing. But somehow I don't think that will happen. My bet is that at most it would just turn into one of many conspiracy theories on the fringe that people just ignore. The normie know-alls will come along as usual and pooh-pooh it and the government shills will 'debunk' it and nothing much else will happen. Maybe there'll be a book or movie that'll get panned as

pseudo-science, but I expect that's about all. The government itself will make sure of that."
Dean proposed that we don't tell them anything, but if the Clathrate gun in the Arctic went off then it would be game over so we should concede and tell them. There would be no point in any more direct action or activism. At that stage we would have to tell them and call a halt to operations.
"That's not really fair," I argued. "What if we are arrested or killed and they never get to hear? We should warn them what to expect in advance."
"I'm worried they will all lose hope," said Dean.
"Oh no, not that old *hopium* again! Hasn't this fetish about not losing 'hope' caused enough damage in the world already? Liberals are lobbying governments now because they still have *hope*. We both know that there is no political solution to the dilemma of the Climate crisis, but it's hope that keeps these people in chains and stops them taking action."
So we convinced ourselves that we should tell the others and in the end they took it pretty well. Though I'm not entirely sure they believed us. It was just one of those things hanging out there like a Sword of Damocles over us that no one ever really talked about.

Then the tourist season began and it was immediately obvious that after Brexit and the financial slowdown that Greece was going to have a tough time. Much of the Greek economy relied on the tourist trade and it soon became obvious that most of the Brits were not coming that season. After peaking in 2019, the number of charter boats in the Ionian seemed to have about halved.
Early in the season everything with our project came together and it was time to decide on a date for the action. Weather reports indicated that a day was coming up with unsettled weather on a moonless night. We decided that was perfect because overhead surveillance would be restricted and it would give the skiffs the best chance of evading detection up until the last moment. Dean took a final inspection trip to the factory and then turned the keys over Antonis and Theo.
We decided that all seven of us would have a party on my boat, and then when it got dark George would slip out with Antonis and Theo and take them in his boat to the factory.
All three of them would leave their phones behind to make it seem like they were still on board my boat. George would come back and at some point he would get his phone. Then he would stagger back to his taverna pretending to be drunk. After making some excuses he would collapse into bed for the night.
The two Annas, Dean and I would party on and stay on my boat until morning. At daybreak George would fetch Anna and take her in his boat to Mýtikas were she had left her car. She would take Antonis and Theo's phones with her to make it appear that they were with her, and then she would travel to the mainland and rendezvous with them early in the morning on the coastal road after they had finished the op. They would then all go to Theo's place in Athens and lie low for a while and Anna would return to the island when she thought it was convenient.
We agreed that if the operation was a success then they would text a picture of a laurel wreath when they got safely to Athens. If it failed, or the pick up couldn't be

done, or someone was apprehended, they would send us a picture of a lemon, and if it were a partial success then they would send us a Yin and Yang symbol. If anyone died then they would send a picture of lilies.
The designated night came and it was warm with some blustery wind and rain, which Dean thought was perfect. Everything went off without a hitch. We made a big show of eating and drinking on my boat, but underneath everyone was a bit apprehensive and no one actually got drunk. We stayed up all night and in the morning George came and picked up Anna and they departed quietly so that hopefully no one could attest that Theo and Antonis were not with them.
Dean and Barcelona-Anna slept on my boat until the morning and around midday my phone notified me that a message had come through. I knocked on the door of their cabin and found that they were awake and had got the image too.
"It's a laurel wreath," said Dean, and then I noticed a big tear run down his cheek. Anna laughed and kissed him and I immediately made gestures of alarm and motioned to hush and quiet down. She cringed at her lack of discretion.
I went silently back to my bunk and sighed a long sigh of relief and euphoria.
For the rest of that day I tried to hang around televisions and pick up any news of the event without seeming too enthusiastic. The pseudo-English pub, "The George," had a TV with only Sky News in English but no local news. Eventually, in the early evening the story broke and an English guy I didn't recognize came in and told everyone that there had been some kind of terrorist attack in the Ionian. The barman quickly flipped to a local Greek channel and we saw a reporter breaking the story in Greek.
"What are they saying?" I asked, trying my best to act casually.
A Greek man at the bar translated for me. "They say the oil rig has been attacked."
"Was there much damage?" I asked.
"Not much they say," was the response. "They said there is damage to the leg. Maybe it is broken. And the two supply vessels, they have been disabled."
"Were there any injuries?"
"They say no,"
"Do they know who did it?"
"No. No one has claimed responsibility, they say. They say perhaps it is undercover Turkish forces, or maybe *Epanastatikos Agonas* has revived again."
There was some footage of a container ship taken from a helicopter.
"Was the ship involved?" I asked.
"There was a freighter in the area. It has been damaged and it is drifting out at sea without engines."
"What's its name?" I asked.
"They do not say."
But then the name suddenly scrolled by in English and I picked it up. I immediately searched for it on a marine traffic-tracking site and found it with no problem. What I discovered took my breath away. The vessel was a big cargo ship and I could see it in real-time on a map display making no headway. The amazing thing was that it was at least two miles away from where I knew the drilling platform was. Which meant that Dean's handiwork had managed to disable a huge ship at the range of at least a mile with a single electric pulse!

Later on I heard the full story from Greek-Anna.
Antonis and Theo launched the skiffs and navigated through the rain and moderate seas using only a handheld compass and dead reckoning. They had to refuel from jugs they brought with them but the wind was in a favorable direction and they made good time. The drilling platform was lit up like a Christmas tree and visible from very far off. They struck an oblique course towards it so as not to arouse suspicion. A mile from the target they armed the ROV boat with the EPFCG, set up the remote steering and propped up a dummy dressed to look like a fisherman in the stern. They gave it one last wipe-down with Clorox, spread some of the hair clippings in the bilge, and opened up the throttle. Theo transferred to Antonis' boat with a leap and they lay ahull in the water and drifted in the dark. Antonis held umbrellas against the rain as Theo steered the ROV to a point just upwind of the lights using the remote control.
The drilling rig had two tenders that were standing by not far off. One of them was apparently a security launch. A searchlight came on and illuminated the ROV skiff as it approached. They started hailing on a loudspeaker. At that point Theo veered suddenly toward the rig itself. The patrol boat started moving foreword but only at half speed, keeping the searchlight trained on the fishing boat, which provided perfect illumination for Theo. He vectored around the other tender, a tugboat, using it as a shield from the patrol boat and its searchlight.
At that point the water cannon on the tugboat came on and the tugboat crew tried to turn it on the skiff, but it was out of range, chugging along merrily at a slow pace towards the base of the rig. As the plume of water from the tug caught up with the skiff it was only yards from one of the rigs pylons. Theo hit the trigger the moment spraying water risked hitting the EPFCG or capsizing the skiff. Immediately the whole scene went dark, followed an instant later by a loud retort. The two immediately headed for their rendezvous point with Anna on the coastal road, certain that the operation had been a perfect success.
They found the rendezvous point in the dark using two marine navigation lights as transits. Once they hit the beach they followed the same routine of wiping the boat down with Clorox and dumping hair clippings in it. Then, wading in the shallows, they turned the skiff around, lashed the tiller, opened up a seacock to scuttle it, and turned it out to sea. It went chugging off into the darkness and they waved it goodbye and then settled down in the bushes to wait for daybreak. Just before the appointed time they scrambled up to the main road above the beach and waited out of sight for Anna to pick them up. She arrived exactly on time and barely paused to pick them up. As they sped off to Athens, she gave Antonis and Theo their cell phones and an enquiring look. Without saying a word Antonis just beamed from ear to ear and gave her two thumbs up. As meticulously planned, by the time they hit the first surveillance cameras at a highway tollbooth, they had already changed into dry clothes and seemed as innocent as pie.
The Prime Minister of Greece made an announcement, calling the operation a "cowardly terrorist attack" and saying the perpetrators would be brought to justice shortly. The item made the BBC headlines and Canal+ and was picked up by most other EU news outlets, but it received little coverage in the US. There was no mention anywhere of the fact that it was an EMP device. All reports said it was a

"small improvised explosive" and failed to mention the freighter that was knocked out. They said that the rig would be towed to dry-dock for a "damage assessment" but claimed that damage was slight and there were no injuries. However it later transpired that the drilling platform and two tenders were actually effectively a write-off. With so much wiring and electronics aboard, replacing all the electrical system is effectively a rebuild and the rig was built decades ago in Malaysia anyway. Oil exploration was effectively halted because the French-Italian oil companies who had the concession would have to lease a new rig, driving up the costs enough for them to shelve the project until an insurance claim could be settled. In the end, the insurance company disputed the claim on the basis of an exclusion clause for terrorist activity.

Greece's dreams of becoming the Norway of the Mediterranean by 2030 were shattered. Environmentalist groups were ecstatic because the drilling area was in one of the world's most significant marine mammal habitats. The species threatened by drilling included sperm whales, fin whales, Cuvier's beaked whales, dolphins, monk seals and loggerhead sea turtles.

It turned out we got a lot of bang for our buck. Dean estimated that the whole operation cost under a thousand Euros all told. Thinking back to those two young French girls doing the study of posidonia in Aetolofos Bay the year before, I wondered how much their project had cost by comparison.

Thrilled with our success, while Antonis and Theo lay low in Athens, the rest of us started planning to scale up into an ambitious, multi-national campaign. However our plans were suddenly cut short in mid summer by a confusing news item from the US Arctic Research Commission. Both Dean and I subscribed to their mailing list, mainly to get news of the sea ice coverage and to monitor methane emissions. From the daily updates of Arctic news we got the first warning of a major news story that was about to break about the Polar regions. As the story developed in the press we began to realize that our worst nightmare had just occurred: *The Methane Dragon in the Arctic had finally roared.*

How it happened was totally unexpected.

Dean and I often speculated if and how we might know when the Clathrate gun actually went off. Bear in mind that in December 2018, a massive meteor blew up in a fireball over the Bering Sea off Russia's Kamchatka Peninsula and no one really even noticed. The blast had impact energy of 173 kilotons at just 25 kilometers above Earth's surface, yet it was only months later that data from US military satellites was analyzed and the event was reported to NASA. If a event that large could go largely unnoticed, we expected that the first hint of a major methane eruption on the ESAS might simply be that global average temperatures suddenly spiked without warning.

We speculated that if a large enough methane "burp" happened then the news might immediately be classified and suppressed. We even had fanciful visions of observational Arctic scientists trying to report the event but being rubbed out by secret agents sent to get them before they could get the word out!

The US had already pulled all government funding from unclassified methane measuring projects in the Arctic, so it would be hard to tell when, or how we might find out if the Clathrate gun had gone off with something upwards of a sudden 50

gigaton release. There were some private companies that had launched high-resolution satellites capable of measuring Methane emissions (such as GHGSat and MethaneSAT), but those were mainly for monitoring emissions from industrial oil and gas facilities.

As it turned out, the first clue we got that the event we were dreading had actually happened came in a round about way due to a news report that a Russian floating nuclear power-plant had just sunk near Bennett Island. Although theoretically the Methane Dragon could roar at any time, we were actually expecting it to occur in late September when the sea ice in the Arctic hit its lowest extent and the seas were at their warmest for the year. So happening in mid summer, before the annual melt had completed, took us totally by surprise. It took quite a lot of sleuthing to figure out what had actually happened.

Russia's state nuclear energy corporation, ROSATOM, embarked on a plan to mass-produce self-contained, low capacity, floating nuclear power plants as part of Putin's ambitious Arctic expansion program. Accompanied by a lot of media attention, on 14 September 2019 a floating barge called the *Akademik Lomonosov,* containing two nuclear reactors, arrived from St. Petersburg at its permanent location in the Chukotka region near the ESAS. According to ROSATOM the reactors could generate enough power to supply the needs of a city of up to 100,000 people.

Across the world accusations of a "floating Chernobyl" were raised amid concerns about Russia's tarnished nuclear safety record. Only a short time before, 14 sailors had been killed in a fire on a secretive nuclear submarine called the *Losharik* and soon after five scientists were killed during a mysterious failed nuclear missile test in the White Sea. So Russia's nuclear safety record was not stellar.

What the Russians did not publicize was that the nuclear power station *Akademik Lomonosov* had a sister ship that was launched at about the same time. It was towed to the Arctic in early summer to conduct experiments that would have been highly controversial had anyone known about them. Nuclear power plants produce extraordinary amounts of hot water, and the Russians decided to put it to use to open up sea-lanes. The idea was to see if a floating nuclear barge could be used as a kind of icebreaker to cut a lead through the Arctic pack ice and keep it open for shipping by heating a large strip of water in its wake. That way a northern shipping passage through the Arctic could be held open to extend the navigation season, perhaps potentially all year round.

Whether it worked or not, I don't know, but when the barge was east of Bennett Island it triggered a huge undersea eruption and promptly flipped over and sank with the loss of 75 people on board, almost taking two towing vessel with it.

Dean and I quickly realized what had happened as soon as video footage of the disaster was published.

In the oil and gas industry a significant hazard when drilling for deepwater oil is disturbing methane hydrates. BP's Deepwater Horizon accident in the Gulf of Mexico happened when workers decreased the pressure in the drill column and applied heat to set the cement seal around a wellhead. An eruption of methane gas from clathrates shot up the drill column and exploded with catastrophic consequences. It's no wonder that oil workers sometimes call these outbursts "burps of death."

Back in 1990, a British rig also had a narrow escape near Aberdeen. An eruption of methane gas pushed the rig off its target location and created a methane upheaval at the surface a meter high and about 50 meters in diameter. The blowout lasted for about 24 hours and afterwards an underwater ROV discovered a crater on the seabed about 30 to 40 meters deep and wide. Engineers said the rig narrowly escaped being sunk due to the loss of buoyancy caused by the bubbles in the sea.
In the Nineties, sonar surveys of the ocean floor in the North Sea found a sunken trawler right in the center of a large methane eruption site, now called *Witch's Hole*. The researchers that found the wreck attribute its loss to a clathrate burst because the wreck was undamaged and the chances of it landing up in an eruption crater by chance were minuscule.
The USGS claims that the so-called Bermuda Triangle is a just a myth, since the loss rate of vessels and planes there is no higher than anywhere else with the same traffic density. Although the very concept of a Bermuda Triangle is controversial, scientists have posited a Methane gas theory to account for some of the mysterious sudden disappearances of ships and planes in that area (and in a similar area in Norway). Even the erratic compass deviations that Christopher Columbus recorded in the triangle on his 1492 voyage could potentially be accounted for by methane bursts (but that's even more controversial).
Nonetheless, laboratory experiments have shown repeatedly that bubbles can sink a ship by lowering the buoyancy of the water due to cavitation, but in spite of the evidence most "experts" continued to report that it was not possible for one reason or another. However when Dean and I saw the video clips of the Russian nuclear barge tipping over we had no doubt about what we were looking at. It clearly sank due to buoyancy loss in a violent methane outburst from the sea floor.
What followed next was a long-running saga in the news that unfolded much like the months-long Deepwater Horizon coverage. The Russians took a long time to acknowledge that they were doing experiments with heating the Arctic sea, but satellite images clearly revealed the telltale thermal image of a long wake of warm water that stretched for hundreds of miles behind the sunken vessel.
What happened next was truly terrifying.
As time went by, the gas venting around the sunken nuclear power vessel started increasing dramatically. When the Russians sent down ROVs to inspect the wreck they found that at least one reactor, and possibly both, were leaking. Soon radiation and large amounts of hydrogen started to be detected in the atmosphere downwind of the ever-increasing methane plume. The authorities immediately declared a large exclusion zone around the area because it was becoming increasingly obvious that the reactor cores were in meltdown and a large explosion was expected as soon the hot nuclear fuel met the frozen clathrate deposits that were obviously underneath it. At that point the news media around the world started carrying alarming headlines like, "Is The China Syndrome Unfolding in the Arctic?"
The China Syndrome was a 1979 disaster movie. The name comes from a hypothetical nuclear meltdown allowing nuclear fuel to leak through the reactor containment vessel and continue searing its way down through the foundations, metaphorically "all the way to China".

In reality of course, what was more likely was that the reactor would explode as soon as it encountered the underground water table. No doubt thinking along these lines, the USGS and other geophysical and nuclear authorities predicted that as soon as molten reactor fuel from the sunken wreck reached the clathrate deposits it would explode. The resulting explosion was anticipated to disperse the molten reactor core and so render it subcritical, at which point all fission reactions would cease. Since the seabed was about 60 meters below the surface at the location, the seawater would then safely contain most of the radiation and render it relatively harmless – at least in the short term. Political leaders were quick to point out that the reactors were relatively small – about the size of those on nuclear-powered ships and submarines, and many of those, like the *USS Thresher*, the *USS Scorpion*, and the Russian *Kursk*, had sunk without causing a major environmental catastrophe. The *Kursk* suffered an explosion and sank in the Barents Sea in 2000 at roughly the same geographic latitude without much harm to the ecosystem. Contrary to expectations, no explosion occurred.

Even though it was beyond the limitations of ground penetrating radar, it gradually became obvious what was happening. The molten nuclear material was holding together and burning through the frozen clathrate deposit like a hot lance. No one knew precisely how deep the deposit was, but estimates said that it could be as deep as 10 to 15 *kilometers*!

The meltdown was creating a flue or chimney in the clathrates that was forming an escape path for huge amounts of methane. As the days turned to weeks and then months, the rate of venting only increased. The seep was soon over 200 meters wide and erupting like an undersea volcano. Whole chunks of clathrate deposits were arriving at the surface like floating pumice from an undersea volcanic eruption. These steaming chunks filled the air with dry smoke like a rock concert on steroids.

In the time that followed, the summer Arctic ice thaw revealed a further frightening development. A severe sea temperature anomaly developed around the site of the disaster and a series of follow-on seeps started downstream in the current from the first major eruption. A downstream flow of warm water was apparently melting the permafrost cap on the whole clathrate deposit and unzipping it like a Ziploc freezer bag. Methane was soon pouring out of an undersea fissure that was kilometers long. Sonar scans of the seabed started to reveal gas hydrate pingos (or undersea clathrate domes) up to 500 meters wide and spread out in a long swathe. Methane was starting to bubble up violently from these undersea structures and gas flares were already reaching the sea surface over a huge area. Scientists soon estimated that, all told, the combined release was quickly approaching at least a 100 gigatons of methane vented straight into the atmosphere. It only took a matter of weeks for that dramatic increase in greenhouse gas to circulate round the northern hemisphere, and it was only a matter of months before the increase in atmospheric methane was detectable even in the southern hemisphere.

Finally alerted to the risks of atmospheric greenhouse gas accumulation from the undersea eruption, the Russians began attempts to “flare” the methane plume by various means. By igniting the methane they hoped to convert it into CO_2, which was a far less potent greenhouse gas. They sent in unmanned vessels with

incendiary devices and also tried dropping phosphorus bombs and flares from the air. Unfortunately this didn't work as well as the videos on the Internet showing people flaring methane under frozen lakes by lighting the gas as it escaped from holes bored in the ice. It turned out that the methane-air mixture was too rich, and so methane would light up dramatically in the Arctic twilight, but a continuous burn could not be sustained. There simply wasn't enough oxygen in the air, and any thought of adding additional oxygen artificially was thwarted by the fact that such large quantities of commercial oxygen were not available.

The way events unfolded, it was impossible for national governments or governing authorities to conceal all this information from the general public. The UN put out an emergency report through the IPCC on what effect this was likely to have on Climate change. Hedged with numerous caveats and calls for further research, it was impossible to hide the fact that this single catastrophe would raise global average temperatures by at least one or two degrees Celsius. There was reticence about saying when precisely that would happen, but the threat was undeniable. Given the fact tipping points and self-reinforcing feedback loops in the climate system would now kick in (from runaway ice-melt to rapid deforestation and wildfires), we were on our way to the dreaded "Hothouse Earth" scenario, and it was beyond human agency to stop it. We would all just have to watch helplessly as it happened.

Most experts were candid that the effects would already be felt that summer. A new term entered the public lexicon to describe catastrophic, methane-induced global warming: *Abrupt heating*.

Russia came under huge international criticism and there were immediate calls to halt building nuclear facilities in the Arctic, but by then the point was already moot. The horse had already bolted.

Totally unapologetic, Putin argued publically that *Abrupt heating* now made development of the Arctic that much more urgent, because the Earth's climatic zones were previously advancing north (and south) at the rate of about 20 miles per year, but with *Abrupt heating* that rate would increase an order of magnitude (or maybe even two). Immediately conspiracy theorists floated ideas that Russia had caused the whole catastrophe deliberately in order to destroy the rest of the world and make northern countries the only habitable places on Earth. Who really knows? For all Dean and I knew, it was even possible that it was all a deliberate conspiracy to cause the Earth-flip to happen sooner. Anything was possible in such a bizarre environment.

Either way, around the world, the climate debate stopped dead. Climate denial evaporated in the US almost instantly. When the Methane Dragon roared, millenarian and progressive myths largely fell by the wayside (along with radical dreams of Left-wing Global Revolution, climate change mitigation, climate restoration etc.). The promise of Green New Deals, already hollow enough before, suddenly seemed utterly out of reach now.

For a brief time people took to the streets in capital cities around the world to demand "Climate action no matter what". The movements that were lobbying governments before, like XR, Greta Thunberg's school strikers, and the Sunrise Movement, were suddenly overshadowed as genuine, unbranded, unorganized

popular concern swept them aside and catapulted ordinary folk into the streets to demand governmental action in spite of the hopelessness of the situation. That initial wave of concern evaporated as the public began to realize that there were no permanent solutions. Political leaders admitted that it was a crisis without a fix. However there were still stopgap measures that governments were taking.

As many of Dean's numerical models had predicted, that concern increasingly translated into a demand for emergency geo-hacking on a massive scale. And those demands increased as the world moved into a very hot summer indeed. Solar radiation management, or SRM, projects (like SCoPEx, funded by the Bill and Melinda Gates Foundation) were not advanced enough to swing into action on a massive scale any time soon, but governments around the world immediately removed pollution emission standards in a desperate effort to increase the Global Dimming effect of aerosols in the atmosphere. The idea was to increase coal burning as an emergency measure to block out the sun while longer-term tactics could be found. In China, the government even started deliberately burning coal deposits in the ground on a massive scale.

Even before the crisis, China had at least 62 uncontrolled underground coal fires that smoldered away in coal deposits below ground and defied attempts to put them out. Those fires alone burned 20 million tons of coal annually, which was almost equal to Germany's entire annual production of coal. For decades those uncontrolled fires accounted for about 2-3% of the world's annual CO_2 emissions. Similar uncontrolled coal fires were burning in Russia, India, Indonesia, and the US. In the Eighties the residents of Centralia in Pennsylvania had to be relocated away from a fire that has been burning since 1966.

In an effort to cool the Earth, a decision was made in Beijing to deliberately set more coalfields alight with the short-term goal of causing an artificial "volcanic winter" in an attempt to help counteract the immediate effects of the increase in atmospheric methane (at the expense of human health and acidification of the oceans). It was largely an ineffective "poor man's SRM".

While all this was going on, the general mood around the world became subdued – almost quietly apprehensive and surreal. I imagine it felt much like the period of Phony War at the beginning of World War II. The German *Blitzkrieg* in September 1939 in Poland was followed by a quiet interregnum of what Germans called the *Sitzkrieg*, or what Brits called *The Phony War*. For an eight-month period after Britain and France declared war against Nazi Germany, there was a strange lull until Germany invaded the Low Countries in May 1940. For a while life carried on pretty much as normal, but with a brittle air of nervous anticipation of the looming catastrophe.

With the no-doubt cataclysmic effects of *Abrupt heating* just around the corner, you might naturally assume that everyone would run around in a panic with their hair on fire. But after the initial flurry of panic, the exact opposite happened. Many people simply gave up on their careers and started partying. There were mass defections from the workplace and many workers effectively downed tools and cashed out savings and retirement plans. For a time, crime and suicide rates fell dramatically around the globe. But drug and alcohol use spiked. Without what economists are fond of calling a "beneficial work incentive", formal mass production

slowed down dramatically and measures of things like "consumer sentiment" and GDP became meaningless. They were replaced by what some people called the "party economy", which overtook the traditional global economy and for a while the economic recession even turned around in a brief kind of *go-go* era. Psychologists coined the term *Industrial Relief Effect* to describe it. Ironically, although atmospheric methane concentrations were spiking, global CO_2 emissions started to decline significantly for the first time due to a slowdown in industrial activity.
People knew deep down that it was not just the passing of an era. It was more than even just the passing of a way of life. It was probably the passing of human life itself.
Everyone was suddenly in global hospice, and for a while it turned out to be a time of grief, reconciliation, catharsis and sometimes joy. There was a brief golden period of global psychological unburdening. Some were openly calling it a "time of love". Personal ambition seemed to fall by the wayside and in its place a strange atmosphere of relief, camaraderie and joy blossomed. It was like a kind of global emancipation from millennia of slavery. It felt like the world was getting sane. Some compared it to an early Christmas.
I think Dean summed it up when he said, "The best kept state secret is the misery of everyday life. Civilization condemns us to a life of quiet frustration, and condemning us to domestication and wage slavery means we never have the time, money, self-respect or will to revolt."
But suddenly there was relief. The truly remarkable thing, at least for me anyway, was the total absence of panic. It seemed like the calm before the storm.
With the prospect of *Abrupt heating* leading to imminent collapse generally accepted, people had a sudden, radical readjustment in attitude. There was a surge in interest in things like Zen Buddhist philosophies and equal migration to Millennialism, Evangelical Christian ideas of the Rapture and Islamic Apocalypticism. Poorer areas of the world in particular saw a marked growth in Eschatological Islam, Judaism and Evangelical Christianity. Dean dismissed it scornfully as a "disease of the brain that precedes the disease of the crops and the body politic."
World-rejectionism became as common as renewed nature worship.
While many turned to fundamentalist religion and anhedonia, there was a corresponding rejection of orthodox religions and a counter-migratory wave towards rampant hedonism at the same time. As usual, art got there first. There's a wonderful scene in the *Simpsons Movie* when Apocalypse is coming and the shadow of a citywide EPA containment dome moves ominously over a church adjacent to *Moe's Bar*. Christians and drinkers run outside simultaneously, and when they see what's happening, they immediately freak out and the two groups run to switch places with each other in the church and the bar!
Finding George sitting alone, smoking and brooding morosely on a sea wall one day, I asked him what he was feeling.
"I am grieving for my masseuse in Mýtikas," he said. "She says she doesn't want to see me anymore. She says she is turning back to religion, to God. She says she doesn't want to sin anymore and she says I must turn to my wife."
"What will you do without her?" I asked.

“I guess she is right,” said George, stubbing out his cigarette. “Perhaps I had better look after my wife before Jesus takes anything more from me. You would not believe how much religion has taken from me. This is just the latest thing. No doubt God plans to take a lot more from me before he is finally finished with me. I think He plans to turn me into the prophet Job.”

At that time it seemed you could hardly meet anyone whose ideas had not fundamentally flipped. You could feel an almost palpable change of heart in the air. The word "penance" comes from a Greek word meaning "change of heart". George took it upon himself to nudge the people of Agios Nikolaos to have a change of heart. He ended the bakery wars. Following that, he ended competition in general between the min-markets and even the tavernas.

George convinced the other islanders that it was simply a matter of being pragmatic. We were not far into the tourist season when it became obvious to everyone that there was a drought of holidaymakers. People still came from other countries, but it was plain that it was not the regular tourist crowd. Some of the rich folk who owned yachts came, but the staple of the tourist harvest season – the credit card sailors and retirees – did not show up that year. And there was no reason to assume that they would ever be back in the future. The tourists who did come seemed to me to be a more down-market crowd and younger than usual. They were mostly bucket list travelers fulfilling lifelong ambitions to see Greece before they died. I presume that many of them were spending their life-savings to travel or cashing out their retirement funds early.

It was obvious from the beginning that there was not enough tourist trade for the people of Agios Nikolaos to get by.

The village was too small to have a mayor – even too small to have a town hall. But George took on that role and called a public meeting in the school hall to address the crisis.

The hall was packed with people and the heat was stifling.

George stood at the front of the hall with his aged parents, his wife, Anna, Kostas and his daughter Maria. They were sitting on chairs arranged in a semicircle behind him. He presented the villagers with the stark reality: *the whole of Greece relied on the tourist trade, and now it was drying up, probably never to return.*

He said that if they did not radically reorganize themselves to address the issue then suffering and conflict would tear the village apart. There was no way, he said, that they could continue to have three bakeries competing against each other, three mini-markets trying to do each other down, and all the tavernas desperately trying to poach each other’s customers. He proposed that they join into a co-operative and share just one bakery, one store, and one taverna. They would pool their resources and labor, and then they could raise prices because the few tourists who came would be a captive market.

The immediate question of concern was which businesses would be the ones to close. George proposed that everything should be shut down other than the bakery at the harbor, the mini-market next to it, and his taverna. The orange-cake bakery would be used just for baking and would supply the bakery at the bottom of the hill. Everyone could see it made sense.

Although not everyone would readily admit it, the best baker in the village was George's cousin in the orange-cake bakery. George pointed out that they could pool all their equipment; she could make all the bakery ware in the morning and then either take the rest of the day off, or help out with sales in the bakery at the harbor. As to the mini-markets, one of them was run by a scruffy-looking fellow who seemed to stay in business by short-changing the tourists; the other was run by an unhappy looking troll who scraped by at the best of times simply by stacking huge crates of the most saleable items (beer and water) outside his shop to attract the tourists. A pleasant young woman, who got most of the trade anyway, ran the nicest, cleanest and best-stocked mini-market. There was obvious logic to combining the stores into one, raising the prices and sharing the labor.

And as for the restaurants, everyone knew that *George Taverna* was the best by far, and they were in silent admiration of what he was offering, because they knew he could probably survive even on his own, or he could have just waited the other tavernas out until they went bankrupt and he bought them for a song. Instead, by offering to turn his business into a collective he was making the biggest sacrifice of anyone in the village.

The main opposition to this whole plan came from the older folk, and in particular Mr. Panos. With him it seemed to be a matter of obstinate pride and personal politics. He railed against the idea because he said his father would turn in his grave to know that the island of his birth had turned Communist. He said it was his ambition to leave his son Yannis a thriving business that he could own privately.

"What kind of a father leaves his children a share in a co-op?" he ranted.

As kindly as he could, George tried to explain that in future no one was likely to bequeath wealthy estates to their heirs anymore. What was far more likely was that within ten years the whole human race might be extinct.

Mr. Panos said that if that was so then it was God's will, but in the meantime, he was not going to commit the sin of behaving like a heathen Communist.

I was told George replied, "Alright, then just call yourself a Socialist! You are a national socialist, right? Well, at some point soon the government will collapse and be finished. So that leaves you a socialist. If you are a socialist, then you should join us and share. All I'm really proposing is that we are not antisocial to each other."

Mr. Panos was furious, but there was nothing more he could really say, because people argued with him that they needed to raise prices, and the best way to do that was to have a few amalgamated co-operative monopolies.

"We can all just agree to fix prices," he argued.

But George said that would just magnify the differences in each business and make the struggling operations bankrupt that much sooner. "Who would take care of the people whose businesses went bust?" he asked rhetorically. "The state? Don't make me laugh!"

And again, everyone knew that he was arguing from a position of strength, because if it all came down to a game of Monopoly, George was obviously sitting on Park Lane and he would clean up, if that's what he chose to do.

Mr. Panos said that anyone who went bankrupt could just get a job from the people that were still in business, or go to Athens. But it was a hollow position expressed

without much conviction. And he got booed, because who would be hiring in this new world?
Finally, Mr. Panos declared that he would not be part of the scheme, and George accepted that, which left Panos frozen out.
Stiffer opposition came from the older folk. The essence of their problem was that they were living off rent from some of the business premises.
"This is the next thing I'm going to propose," said George. "As you know, some of you even rent from me, but in the world that's coming, I don't see how anyone will be able to live on rent from someone else."
There was a general murmuring around the assembly.
"From now on," said George, "I will not be collecting rent from anyone. If you are a landlord, then I encourage you to follow my example."
"How will we live? I get all my money from rent," asked one old man.
George proposed that if his taverna was the only one open on the island, then any of the islanders – Newcomers included – could dine free at his place. In exchange, everyone would promise to supply the restaurant with food as best they could. The fisherman especially would be asked to supply free fish, and anyone who had a vegetable garden or a goat to milk was asked to provide free produce.
George proposed that everyone should live off their savings, and if anyone needed anything, however big or small, they should let everyone in the village know. If something needed to be bought, then they would pool their money to help a person buy what they needed.
He warned them that if the village did not form into a cooperative commune then they would just be making unnecessary hardship for themselves.
Dean, Barcelona-Anna and I were witness to all of this, and I must say I've never seen anything quite like it. The mood in the village instantly turned from a pall of doom to a kind of festival atmosphere.
To cap it all, and seal his plan, George asked for a ceremony of reconciliation. He called on Father Chryssavgis to plan a *Sacrament of Penance* in the church. The priest obliged a few days after.
The whole village attended the service, and it is hard to express how moving it was. Tears of forgiveness flowed like rain in the congregation. People came up to George afterwards and hugged him. Many people wept openly in front of him and women kissed his hand.
Even Mr. Panos conceded and came up sheepishly and asked George if he could participate in the plan. George just shook his hand, smiled good-naturedly and offered him a conciliatory cigarette. I saw them later sitting together in the shade of a tree, enjoying a glass of ouzo and laughing and chatting like old friends.
There was a celebration that afternoon and it went on all through night. The villagers did traditional dancing and the tourists joined in, asking what special festival this was. "This is the Festival of Life, my friend. Come and join in!" I heard George say.
And it didn't end there. That day people spontaneously started forgiving each other their debts. Longstanding obligations were cancelled with a mere handshake and I saw at least one woman collapse with either shear emotion or overwhelming relief.
News of the Jubilee atmosphere on Agios Nikolaos spread far in the Ionian.

George's scheme worked far better than anyone had expected. The more they raised prices the more people seemed to flock there. As the tourist trade evaporated from the islands and Greece in general, Agios Nikolaos was a beacon of happiness and relative prosperity. No one could quite work out the secret as to how the island prospered the more the rest of the country, and the world, descended ever deeper into a deflationary spiral. I guess what they were really doing is selling happiness in an increasingly gloomy world. And it was mainly thanks to George and to his largess.

It all worked out, because the villagers all ate free in George Taverna, and so the place was always buzzing. The little they ate was more than paid for by local Greeks and overseas tourists, who started flocking there because the place was gaining a reputation as a bright spot on an increasingly dark map. Since the waiters and staff shared in the prosperity, they were the happiest crew you could ever hope to find, and their happiness was infectious. The workload was the lightest it had ever been, and with their new free time, villagers started volunteering their services for free for cultivating, fishing or generally helping where help had never been available before.

However this golden period suddenly came to an abrupt end – at least for our little group.

The first bump in the road was with George's health. He announced one day that the headaches and dizziness he had been feeling were the onset of Type 2 diabetes. He would have to start taking doses of insulin.

"Now that tyrant in the sky has taken my health from me," said George. "I feel God wants to take everything from me and leave me with nothing."

The next blow came soon on the heels of that news.

George came to Dean, Anna and me one day to tell us that the police in Athens had picked up Antonis, Theo and his daughter. There were questions galore, but very little information to go on.

I must admit that I felt a moment of genuine panic at that stage. But we agreed that there was nothing much to be done. It didn't seem to make much sense to try to make a run for it, so we all decided we would just sit tight and see how things unfolded.

By that stage the weather was starting get visibly strange. There was far less wind than usual. In the mornings you could see *Fata Morganas* without fail – heat mirages on the horizon at sea that seemed to levitate islands into the air as if they were fairy castles. The Maistro still gave some relief in the afternoons, but when it blew it blew unusually hot and intense – almost angry. It reminded me more of *Notus*, the hot Sahara wind from the south.

The sky changed too. It was mostly cloudless, but its color was altering. The old adage is, "Red sky at night, sailor's delight. Red sky in morning, sailor's warning." Shakespeare said in *Venus and Adonis*, "Like a red morn that ever yet betokened, wreck to the seaman, tempest to the field, sorrow to the shepherds, woe unto the birds, gusts and foul flaws to herdsmen and to herds."

Now there were deep red skies in the mornings *and* in the evenings. The weather was alarmingly hot – sultry and sticky.

All over the world there was noticeably less wind. What was happening was that the jet stream was breaking down. The phenomenon of Polar amplification meant that as the global average temperature rose, it rose proportionally faster in the Arctic and Antarctic. With increasingly less temperature differential between the tropics and the poles, the wind gradient of the jet stream began to disappear. That started altering weather patterns all over the world. Later it would contribute to the year being called "The Year Without a Winter". The cold snaps in North America were gone for good, because the jet stream no longer meandered south as it had been doing. Snow disappeared from the Sierras and the Rockies, and the interior began to get hot and parched.

Dean, Anna and I started spending more time escaping from the heat at a little sheltered beach along the path on the way to the *Nikos Beach Bar*. There was a cliff there that gave shade even at midday, and the sea around the pebble beach gave some relief from the heat, although the sea was starting to get alarmingly hot too. Dead fish floating on the surface were becoming an increasingly common sight.

On one of those trips to the beach I asked Dean how we should monitor the all-important ice-melt in Greenland if things deteriorated to the point that we didn't have any Internet or weather news. How would we know we were reaching the instant when Earth's intermediate moment of inertia was at the critical point before the flip? There would be few warning signs. At some point, which Dean had already calculated in detail, the last straw, or perhaps icicle, would slip into Baffin Bay, or the Greenland Sea, and everyone would suddenly get the scariest and most confusing 24 hours of their lives. Was there any way we could be forewarned all the way out in Greece?

Dean gave it some thought for a while and then had a Eureka moment.

"Hunger stones!" he exclaimed. "Let's turn that rock over there into a 'hunger stone'."

In answer to our baffled stares, he explained that in the Czech Republic, just near the border with Germany, there are stone carvings in the Elbe River that warn of severe drought. One of them dated from 1616 reads, "*Wenn du mich siehst, dann weine*" or "If you see me, weep."

Due to the prolonged drought in Europe from Climate change, in the summer of 2018 more than a dozen almost forgotten hunger stones started appearing along the Elbe River to deliver their sinister warnings.

Tides in the Ionian are negligible, usually with average amplitude of just a few centimeters. Dean said that it would take a little more than about a seventh of the Greenland Ice Sheet to melt in order to reach the critical point of mass displacement needed to flip the Earth. That would cause a global sea level rise of about a meter. Assuming there was a corresponding rate of ice loss in Antarctica and the South Asian high mountain region that would put us at about 1.3 meter mark.

"What about the lag in sea-level rise in the Mediterranean?" I asked.

Dean thought that it would not be significant. "The rise would not be even all over the world by any means," he said, "but the actual lag all over the world would be negligible. At most probably about a week or two."

Based on that, we decided to carve a tidemark in the rock on the cliff.

The next day we brought along a hammer and chisel, measured the exact height above the sea with a tape measure, and then carved a neat tidemark in the rock. After we had finished, we opened a bottle of wine from a cooler, drank a toast to the end of the world. Then we played R.E.M's *"It's The End Of The World As We Know It (And I Feel Fine)"* on a boom box.

On a whim, Dean went back to the rock and carved under the tidemark: "If you can't see me, you're in flipping trouble."

It's an odd thing enjoying a drink with friends. It's like making love to a partner, because one of the times is going to be the last, but you never know at the time which one it will be. As it happened, that would be the last time I would ever be able to enjoy a drink with Dean. Little did I know, but as we parted that evening, it would be the last time I would see Dean ever again.

Cp. 9. The Heat is on

That night it was too hot to sleep below, so I stretched out with a pillow on the trampoline between the hulls on my catamaran. Lying on the net about a meter above the relatively cool water was about the only way to sleep with the intense heat.

I awoke at about three in the morning to the sound of two helicopters low overhead. Even in the pitch darkness, I could tell instantly it was a US black op mission because I knew the sound of a Navy Seahawk. It was quite distinct from the usual Eurocopter Cougars and Bell 205s from the Hellenic Air Force that occasionally flew overhead in the Ionian.

The harbor was well illuminated by streetlights so I could plainly see two RIBs with swat teams crouched down in them roaring through the harbor entrance. It was obvious it wasn't a training exercise or movie, because they churned up the water aggressively and sent all the moored boats rocking dangerously. They knew exactly where they were going and it felt like a punch to the gut as I saw them come alongside *Pizzazz* and pile over the guardrails onto the deck.

For some unknown reason my first instinct was to run and get my phone and start filming. I guess I was thinking they were coming for me too, and I wanted to try and capture it on film in case it was just a straight up hit job.

I didn't actually see them snatch Dean. It all happened amazingly quickly. I heard someone shout a few times and the next thing I saw was them piling back into the RIBs. I stood on the deck in shorts and filmed them as they roared past. I could see they had balaclavas, helmets and flack jackets on, but I guess Dean must have been face down in the bottom of the boat, because I couldn't see any sign of him. They did the whole op with such bravado and lack of ceremony that they made it look like a midnight beer run to the corner shop.

I put on a t-shirt and flip-flops and rushed round to *Pizzazz.* When I arrived there were some fishermen standing round on the quay with stupefied grins and wild eyes.

The light was on below and I could see Anna down the companionway through the open hatch.

"Anna," I screamed. "Are you alright?"

"They took Dean," she said. "They just put a fucking gun to his head and took him."

She was in mild shock. She kept repeating, "I just can't believe what just happened."

"Maybe you should pour yourself a drink," I suggested, perhaps because I felt I needed one. My hands were shaking.

She told me where there was metaxa and I poured us some.

I put an arm round her. She drained her glass in one gulp, and then started wiping away tears.

"Who the hell are they?" she asked.

"I think it's the US military," I replied. "Did they say anything to you?"

"They just told me to shut up and stay down."

“Did they have an American accent?” I asked.
“Yes, I think so,” she said. “My God, Hugh, what the hell are we going to do?”
“I don’t know,” I had to admit. “I don't’ think this kind of stuff is really scripted.”
By then George and other people started arriving.
I went out onto the quay and milled about trying to look suitably incredulous and mystified.
Everyone wanted to know what it was all about. I claimed I didn’t know, but we would probably find out in the morning.
I wasn’t too far off the mark.
At daybreak a coastal patrol boat from the Hellenic Coastguard arrived and started going round inspecting all the visiting yachts in the port and asking for their papers.
I stayed on my boat and watched as some high-ranking officers interviewed George.
Father Chryssavgis, came on the scene in full cassock and they took him aside and had a conversation with him too. I was rather alarmed to see that after speaking to him they made a beeline directly for my boat. I politely invited them aboard and they asked to see my passport and ship’s papers. I could see from the insignia of the officer in charge that he was at least a Commodore. One of his lieutenants carefully took photos of my passport, registration, insurance, transit log, and TEPAI with his phone. The officer in charge asked to see my radio license, which I thought was unusual. Then he asked permission for his men to have a look around my boat. I said I didn’t mind, and they gave the cabins and lockers a cursory sweep.
“Is there a problem?” I enquired.
“No problem,” the officer assured me.
“What’s going on?” I asked.
“We are conducting an investigation,” he said. “It’s about the oil rig. Do you know anything about that?”
“Yes,” I said. “I think I sailed past it once or twice near Patras.”
“What about the explosion?” he asked. “Do you know anything about that?”
“Yes, “ I said without hesitation. “I saw what happened on TV. Are my papers in order?”
“I will tell you shortly,” he said, and then he and his men left the boat, taking my passport and ship registration with them.
They came back quickly. I was a little panicked by then.
“Do you have your phone with you?” the officer asked.
I said yes.
Then he asked me to accompany him ashore. “We need you to come with us,” he said. “Please secure your boat, surrender your phone and come with me.”
“Are you arresting me?” I asked.
“No,” he assured me. “We are just taking you on a little trip to Patras to answer some questions.”
All eyes were on me and I was embarrassed to be a spectacle as they frog marched me onto the patrol boat. They sat me down on a bench between two seamen and then we roared off.
It took about two hours in the sweaty heat to get to Patras.
I was taken to the port authority and from there to some kind of government building where I was strip-searched and fingerprinted. They took a cheek swab for

DNA analysis and swabbed my hands for explosives residue. Then I was taken to an interrogation room with a one-way mirror on one wall. A male Greek detective in a dark suit and his silent female companion interrogated me there. They said they were from Europol. He offered me a cigarette (which I refused) and asked standard questions about where I was on certain dates and times, what my association with Antonis, Theo and Anna where etc. I told the truth throughout. None of my answers seemed incriminating to me. I knew there is never really an upside to talking to cops, but under the circumstances I thought it was better that I cooperated and just played innocent and dumb.

At some point I realized that the interrogator had an earpiece in his ear and he was taking prompts from someone else – probably someone behind the one-way mirror, I guessed.

Nothing whatsoever about Dean came up. At the end I asked what had happened to Dean and demanded to know where he was. It would be kind of suspicious if I didn't, I thought.

I was surprised when the man simply replied, "I know nothing about that. You will have to talk to the American Embassy."

They gave me a sandwich roll and a cup of coffee for lunch. After waiting for tedious hours in that room, suddenly the Coast guard Commodore came in and said there were no further questions and that they would take me back to my boat.

As I was being escorted out of the interrogation room the door in the adjacent room opened and I caught a glimpse of what was behind the one-way mirror. I was surprised to see it was packed with officials and two individuals in particular caught my eye. As I was marched off I turned back to get a better look at them and knew instantly from their crew cuts, dark glasses, black suits and skinny ties, who they were. They were unmistakably speaking American English.

The Commodore told me that they would be holding my passport and I was instructed not to leave Agios Nikolaos until further notice. I hardly dared tell him that wild horses couldn't drag me away the island!

I was then ferried back to Agios Nikolaos by the same Coastal patrol boat and then released at the dock.

I checked in with Anna but there was no news about Dean. I told her what had happened to me and that she must call the US Embassy. Then I went back to my boat and collapsed on my bunk, hot and exhausted.

Over the next few days Anna kept calling the embassy and they kept on telling her they were looking into it and would get back to her. They kept asking her to fill out online forms, file missing persons reports, and send copies of Dean's passport, but nothing much seemed to be happening and they were not giving out any information.

In desperation, Anna finally got through to the Ambassador. He was kind and sympathetic but said they had investigated the case and that she must now take it up with the US State Department back home. Days turned to weeks and her emotional stability started to deteriorate as she was given the bureaucratic runaround in a Kafkaesque cycle of automated virtual assistants and circular call transfers.

In desperation we finally called back to the Ambassador in Greece. His chilling response was now, "I have been advised by the highest authority that under the provisions of the USA Patriot Act, I can neither confirm or deny if your husband is in US custody."

Anna completely lost her cool at that point and started yelling at the top of her voice, "He's a goddamn American citizen! You can't just snatch people in the night in foreign countries and then refuse to say why or what you did with them!"

But the Ambassador just kept on repeating that same cold, mechanical phrase over and over again. Finally we realized it was useless carrying on the conversation any longer.

I told Anna that we must try to tell the press and get the story out in the media. So in the weeks that followed she spoke to journalists and news people. Some were kind enough to listen to her story the whole way through, but no one would report on it. Finally Anna got hold of a sympathetic journalist in the States who gave her the lowdown. He explained that editors everywhere had been told forcefully that this kind of thing was not "newsworthy". He explained that was code for "they are forbidden from reporting on this kind of issue". He told us that Dean was just one of thousands, if not tens of thousands, of the recently "disappeared". Activists, dissidents, journalists, even Internet vloggers and bloggers were being swept up in a dragnet all over the world in the name of national security. People that had been active in the Occupy Movement, XR, the Sunrise Movement, and Earth First – even Sea Shepherd and Greenpeace – had been targeted. We were told that even outspoken celebrities were being swept up.

It was "McCarthyism squared, or quadrupled," the reporter told us. "You can report your story to an NGO like the ACLU, or Amnesty International or even the Red Cross, but there is effectively nothing they can do about it either. The world is turning into a very different place. We can't even keep up with what's going on. The public's 'right to know' no longer exists. Freedom of information no longer exists. We are on a war footing without a war being declared."

At that point we finally realized we had reached the end of the road.

As the summer wore on heat records were being broken all over the northern hemisphere to the point where it was no longer newsworthy either. Everyone seemed to be thinking the same thought: *when do the crop failures start?*

Remarkably, food prices remained suspiciously stable. Unexpectedly, futures and commodity exchanges were actually down. There was no panic whatsoever in the markets. The USDA trotted out a steady stream of pundits who said that the weather was remarkably conducive to good crop yields. The planting season had started much earlier than usual and they said that with the extended season expected due to *Abrupt heating*, farmers could enjoy a bumper crop thanks to double cropping. Some farmers even came on the news to say that they expected to be triple cropping that year. But there was something a bit phony about it all.

The big question in my mind was *water*. Talking heads in the media were saying that increased temperatures actually meant that crops did better – it was *cold temperatures* that were bad for yields. Yet whenever the question of water came up there was always the same pat answer: *water was not a problem these days, because everything is irrigated.*

What most urbanites didn't realize was that all that seemingly endless green in what they derisively called "flyover America", came mostly from the vast Ogallala Aquifer, and it was running out.

Putting in more wells was quite literally a race to the bottom. The problem with going the other way – switching to dryland farming – was that farmers couldn't grow corn. The whole food system in the US was geared towards corn. Everything else was pretty much chicken feed or cattle feed. And if there was a drought that year due to *Abrupt heating*, then chances are they couldn't grow *anything* using dryland crops.

That was all common knowledge for farmers, but what they didn't know was how difficult it would be to do irrigation when the global thermostat was cranked up. The models I had worked on with Dean showed that if the air was dry and the heat started ramping up, then *evaporation* went exponential. What farmers didn't realize, but were about to find out, is that with record temperatures, they were not going to run out of water, they were going to *run out of pumps*. What Dean's research had showed is that very soon after temperatures started to spike, irrigating the soil became like dripping water into a hot saucepan. It virtually evaporated before it hit the ground. So even if there was enough water (which there wasn't), then the next battle was going to be the *rate* of supply. If water didn't stay in the ground, then it was useless for the crops.

And to make matters worse, the dry heat was promoting crop diseases and pests. So demand for pesticides was also about to exceed supply.

Knowing all this, the more I looked at the news reports the more they started to look like a giant government disinformation campaign. It seemed like a cover-up.

So I started looking less at what they *were* saying and started focusing more on what they *weren't* saying. And I started reading more into things that were underreported, but which I thought warranted more media attention. For example, there were one or two minor reports that US troops, for no apparent reason, were being massed at the southern border in large numbers to "defend Trump's wall."

Then I discovered that the Office of Personnel Management's National Background Investigations Bureau (NBIB) had a backlog of pending security clearances that already stood at about 500,000 or more in 2019, but then suddenly spiked to over 4 million in a matter of months! Security clearance administration was being hurriedly farmed out to other agencies.

What was happening south of the border was even more telling.

Mass detention facilities were sprouting up like mushrooms, and Mexican troops had been mobilized to the Rio Grande. What intrigued me was that one reporter stated that they were not sent there to secure water rights for Mexican farmers, but rather to quell any opposition against Mexico cutting off its own supply, to ensure the supply of water for America.

Most illuminating of all was a tiny mention in the news that Californian almond growers were suing the Federal Government over a Department of Agriculture ban on growing nuts in California. Knowing how water-intensive almond production is, I assumed that the ban heralded a dire water shortage in California. But darkly amusing, was the fact that there were no water restrictions on golf courses. Yet in

places like Palm Springs, golf courses use about a quarter of the region's groundwater. That seemed to speak volumes about the priorities of the super-rich. Joining all the dots I could, I was starting to see a severe crisis in global food-security brewing. All over the world, there seemed to be a coordinated pattern of denial.

Power brokers could only keep up the pretense for just so long before the façade crumbled. Cracks were showing everywhere, but the public was remarkably keen not to look. In the end, the dam broke in the global market for rice.

Way back in 2008, while the Western world was absorbed in the financial meltdown on Wall Street, it went largely unnoticed that there had been a massive run on the global rice market. Between January and May that year, India inadvertently triggered a global rice crisis by restricting the export of rice. The government was trying to protect its citizens from rice price rises due to a spike in the price of oil. But the attempt to ensure food security for its people backfired.

Vietnam followed suit and also banned exports of rice. That caused a steady increase in the price of rice in the global markets. Although there was no real global shortage, fears of an imminent shortage of supply caused Egypt, Pakistan and Brazil to impose their own export restrictions. It soon became a self-fulfilling prophecy, and panic swept across Asia. People started hoarding rice even at home, and shelves emptied at retail outlets in a matter of days. The price of rice increased dramatically, topping 300% in just four months. Even Costco and Sam's Club in the US started setting quotas on how much rice customers could buy. Riots broke out in Haiti over the crisis and panic swept through the governments of countries where rice is the staple diet.

In the aftermath of the crisis, in the name of food security, China quietly started accelerating its neo-colonial bid to turn Africa into its breadbasket – or rice paddy, to be more accurate. As the reality of *Abrupt heating* began to seep in, China started mobilizing troops and sending them to Africa to guard its access to agricultural supplies.

One of the lessons learned in the wake of 2008 was that governments should maintain liquidity of supply in the global markets during a rice crisis and strongly resist the temptation to impose export restrictions. Suddenly that lesson was swept aside as countries started to prepare for crop failures due to *Abrupt heating.* Once again a rice crisis enveloped the globe. Only this time it was accompanied by a wheat crisis and a general panic in futures markets and commodity exchanges around the world. Countries where wheat (or corn) was the staple were swept along by panic buying by Asian countries hedging against a shortage of rice.

Models of *Abrupt heating* indicated that the monsoons would become less frequent but more intense in places like India, which would devastate the wet-season (*kharif*) rice crop, first by flood and then by drought. Paddy cultivation is highly water intensive and can only be achieved where annual rainfall is above 115 cm. The optimum temperature for rice cultivation is between 25°C and 35°C, but exposing the crop intermittently to temperatures above that range (even for a few days, or more importantly, nights) puts the rice under heat stress and greatly diminishes yields. Rising temperatures during the previous 25 years had already cut the rice

yield by 10-20 percent in many regions, but the heat waves that summer cut global rice supplies in more than half.

Asian experts had been saying that the longer summer would allow an excellent double-crop of late rice (and maybe even a triple crop). But then a heat wave hit during the crucial 7-day flowering stage of rice in China. There was a week of intense heat waves between July and August during the rice flowering season in Hefei. Another followed during the flowering season in Hangzhou in September. Double-crop late rice, planted just after the first crop is harvested in October to November, usually adds about 25 percent to the total rice production. Now it added barely 5 percent.

Rice is the staple food for nearly half the world's population. Panic seemed to be breaking out everywhere.

Suddenly places like Canada and Russia looked set to become good places to grow rice, but scaling up global rice production there from a few isolated experiments would take decades. So terror around the world was justified, and visceral. Food riots were becoming a daily scene in capital cities all over Asia. Very soon it became too emotionally disturbing to even watch on the news. Around the globe, if they had not shifted that way already, political sentiments swung sharply towards extreme authoritarianism amid waves of mass human migrations of the desperate millions. But the true horrors in Asia and the Middle East had already started in June.

In early June 2019, even before *Abrupt heating* hit, India had already experienced an intense heat wave. For three weeks temperatures soared over 45°C in some parts of the north. Delhi reached 48°C, its hottest day on record for the month of June. Churu, in Rajasthan, reached 50.8°C. The death toll was unknown, but generally only reported to be less than a hundred fatalities. Compare that to 2015 when a prolonged heat wave killed more than 3,500 in India and Pakistan, or the European heat wave in 2003 with a death toll estimated to be over 70,000.

Perhaps news reporters were not aware of how dangerously close India and Pakistan came to a mass die-off as early as 2019. If core human body temperature exceeds about 40°C, it constitutes hyperpyrexia which is a medical emergency. But that's in a dry heat. If the ambient wet bulb temperature exceeds 35°C (example: humidity level of 50% and a dry heat of 46°C) and stays there for more than six hours, then the human body shuts down.

Abrupt heating took the wet bulb temperature in India and Pakistan soaring above 43°C and held it there for weeks. In 2019 the monsoon was delayed, but now the humidity kept on climbing with the heat and the monsoon never came. Finding air conditioning became a matter of survival, but the power grid was soon overwhelmed by the demand and went down. For a while, the best place to be was in a car with air-conditioning, but gas stations started running out of fuel. As the death toll began to mount, there were not even enough survivors to cremate or bury the dead, and work and emergency crews could not operate in the heat and humidity. It was obvious that with so many of the dead going unburied, epidemic disease was likely to flourish. The governments of both Pakistan and India were overwhelmed and called for international aid and assistance.

During the Nineteen-Nineties in Russia there was a joke about the liberalization of the planned economy: "The most feared words in the English language are 'Harvard Trained Economist.'"

A group of economists from Harvard, that later became know as the "Harvard mafia", flew to Russia after the Berlin Wall came down to give the Russian people the benefit of their pet theories on economics in the wake of the economic crisis that followed. Many credited them with the subsequent collapse of the Russian economy and the emergence of an oligarchy amidst the impoverishment of most ordinary citizens.

Something reminiscent of that disaster now unfolded in India and Pakistan, but this time with geo-engineers rather than economists. A Harvard trained professor of Applied Physics called Keith David assembled a team and was on the next plane to India as soon as the disaster hit. They were itching for a chance to try out their madcap loony-scientist ideas about geo-engineering that no one had taken seriously up to that point, for very good reasons!

But politicians in India and Pakistan were desperate, and they needed to be seen to "take action", no matter what. How could they possibly resist even the dubious charms of Dr. Strangelove when he romanced them with things like, "we could create an ice-age at the cost of 0.001% of global GDP. You might argue with the sanity of it, but you can't argue with the cost."

Governments, of course, would never dream of arguing about anything other than the cost.

Professor David had written a book in 2013 called *Why Climate Engineering Won't Ruin the Planet*. He was dead wrong of course, and politicians soon gave him the chance to prove it the hard way.

Under the advice of what might be called the "Harvard Eco-wreckers" the Indian and Pakistani Air Forces began a massive program of sulphate injection into the upper atmosphere. A round-the-clock barrage of artillery and high-altitude airdrops began in a program resembling the Berlin Airlift. Soon the cloudless South Asian skies were a sickly yellow color at noon and an ominous crimson at dawn and dusk.

Stratospheric aerosol injection was intended to enhance the cooling effect of global dimming that only industrial pollution and volcanoes had been responsible for up until that point. It worked, but it was also a triumph of unintended consequences.

The first problem was that the program was destroying the protective ozone layer. Back in 2008 ozone depletion had already been cited as a factor in the global food crisis that year. Plants are much more sensitive to UV-B radiation than people. The next problem was that crops were cooled, and were also cut off from the light they needed for photosynthesis. Increasing the local albedo effect came at a high price in food security and diminished crop yields.

CO_2 emissions create ocean acidification, but solar radiation management is virtually just pouring pure sulfuric acid directly into the oceans and rivers. Acidification of groundwater due to SRM took an additional toll on agriculture in South Asia. The absence of the monsoon and excessive heat evaporation already meant there was a chronic water shortage. So the Harvard Boys recommended weather modification by cloud seeding.

India, along with more than 50 other countries, was already discretely doing cloud seeding before the crisis. Out of the spotlight, China already had the biggest cloud-seeding operation in the world. In a massive project called "Sky River", Beijing had been surreptitiously doing weather modification on the Tibetan Plateau to increase snowfall (a reserve of freshwater), reduce hailstorms, and increase rainfall for agriculture, using tens of thousands of burning chambers. They even used cloud seeding in the build-up to the 2008 Summer Olympics to avoid rain during the national showpiece opening ceremony.

India used silver iodide on a massive scale until it exhausted the global market, most of which was supplied by China. At that point it switched to dry ice (solid CO_2). Cloud seeding doesn't create any additional moisture in the atmosphere; it just squeezes the available water out of the air like wringing out a moist sponge. So anyone who does cloud seeding is selfishly causing a drought downwind. Geo-engineers don't do politics, so they never really factored into their government recommendations that weather modification is not just a science project, it is a potent environmental act that can have far-reaching geopolitical consequences. The country downwind of India, just across the High Mountain Region of Asia, was China.

Sino-Indian relations had always been fractious. The two countries had even gone to war in the Sixties. What the Harvard geniuses had persuaded India and Pakistan to do was reduce snowfall in the High Mountain region, basically stealing the freshwater source that more than one billion people in the world relied on for their survival.

China immediately demanded that India stop all weather modification and solar-radiation management projects. Beijing threatened that it was a *casus belli* if they continued. Riots immediately broke out in New Delhi and Islamabad against the Chinese demands. Caught between a rock and a hard place, both governments were forced to ignore China's deadline and try to forestall action by the UN Security Council. China tried to sanction the two countries in the UN, but their action was vetoed by the United States.

By August, China was at war with both India and Pakistan. Essentially the Harvard heroes had got three of the worlds nuclear powers to lock horns in a deadly conflict thanks to their unintended meddling in international affairs. Newspapers sarcastically pointed out how comparatively lightly the Russians had got off in the Nineteen-Nineties. Soon news outlets were reporting aerial dogfights between the fighter escorts of transport planes trying to dump sulfates and Chinese interceptors making incursions into Indian and Pakistani airspace to prevent them.

War was the first of the Four Horseman to visit Southeast Asia. Multi-breadbasket failures soon brought malnutrition from Famine, and then followed Pestilence, including cholera, dysentery, malaria, and smallpox. For many, I assume, the Fourth Horseman, or Death, was a relief.

In the days to come, it looked increasingly like the rest of the world would be dragged in to the conflict in Asia. The world had never looked so bleak since the Cuban Missile Crisis.

But there was worse to come. In the high summer there were power outages across the Middle East accompanied by mass die-offs in heat waves. No one could even

begin to estimate the death toll, because people were dying of heat exhaustion indoors and weeks could go by before bodies were even counted, let alone removed or disposed of. Governments in the region began to collapse in fiscal crisis and chaos. US ground forces deployed to Saudi Arabia, Iraq, the UAE and Kuwait in the wake of the human devastation in those countries., not to provide humanitarian assistance, but to "secure strategic oil reserves in the power vacuum" in the words of a Whitehouse spokesperson.

Viewers around the world were haunted by an eerie sight: *columns of US marines looking like moonwalkers in microclimate cooling (MCC) combat gear, patrolling in scorching desert heat with specially cooled weapons.* Newscasts were starting to look like off-world sci-fi movies.

Speculators and hoarders raided the oil market and energy markets in a repeat of what had happened in the rice market. In cities all over the world there were lines of cars at gas stations recalling the "oil shocks" of the Seventies. People routinely started queuing up at midnight and sleeping in their cars until the gas stations opened in the mornings, often to be disappointed when the gas stations remained shut and "Sorry, No Gas" signs appeared in the window. "Man shot as tempers flare at gas station," became the staple fare of local kitty-litter newspapers around America.

And yet people did not flock to buy electric vehicles. Although gasoline prices quickly shot up 500% or more, the lines at EV charging stations were worse than gas stations, and the wait times even longer. Home recharging in America was dogged by grid outages and brown outs. Even if you were a high-flyer in a top of the range EV you had to be wary of increasingly hostile social envy. If you didn't have access to secure parking facilities you could expect your vehicle to be vandalized, stolen, or have your tires deflated while you stopped on a city street long enough to find out that your favorite café had run out of coffee.

Oil shocks made the mass die-offs in the Middle East finally seem real for privileged liberals who up until that point had lived in relative insulation. Suddenly mass tragedy on the news wasn't just an "Oh dear" and a "How awful" moment about brown people in some far-off "shit-hole countries" (as President Trump called them). Oil shocks were genuinely shocking for the global rich.

The common refrain heard all over the media was, "wasn't all this supposed to happen in like, 2100 or something?"

2020 was effectively the year when that quaint anomaly at the twilight of ecology, eco-tourism, ended. The science of ecology ended with it and became redundant. With the collapse of eco-tourism, poachers and bush meat traders moved in to vacuum up what was left of most relic species around the world that could be traded at market. As tourist revenues dried up, the monetizing of conservation areas was shown to be a huge mistake.

Along with eco-tourism, the travel industry in general also folded as recreational tourism effectively ceased too. At the end of the season holidaymakers no longer came to the Greek islands, and the fleets of charter boats stayed out of the water "on the hard".

The super-rich around the world, who had long been waiting for what they called "The Event" got in their intercontinental jets and started heading to New Zealand.

Congregations of Evangelical Christians in America that had paid for private jets for church ministers to use as "machines to spread the Word of God", woke up to find that their coffers had been emptied out and their ministers had fled to Christchurch and Auckland.

And on Agios Nikolaos it was hot – very hot.

With no air-conditioning on my boat, I sailed to Aetolofos Bay and swung at anchor to collect the breeze that was funneled between the twin hulls of my catamaran. I found a southerly wind was perfect for making shade at the stern, and I frequently lay stretched out in my dinghy under the overhang under the davits. It was like poor-man's air-conditioning, because the air gap between the hulls funneled the air and cooled it as it skimmed over the swimming pool blue water under the boat. Every now and then I stayed cool by taking a dip in the sea, swimming in my own kind of private indoor swimming pool under the catamaran.

After a while I confidently thought I might be able to survive 60°C or more that way, assuming the sea didn't get too hot and my solar power carried on working so my fridge could churn out ice for my drinks!

People in the village seemed to be surviving the heat, and luckily there were no wildfires on the island like the ones that started raging on the mainland. In 2018 I narrowly missed the fierce fires in the Attica region around Athens. At least 74 people died horribly in those fires, and just the week before I had been anchored near where some people were burned to death and others narrowly escaped by swimming out to sea. So I felt I had some sympathy, if not a lot of first-hand experience, with people who were having to face extensive wildfires all over the northern hemisphere that summer. Anyone who planted a tree in a place like California, "to combat Climate change", saw their dreams literally go up in smoke. Unable to endure the reports of heat waves, die-offs, and wildfires, many people just tuned out the news. But as it became common knowledge that crop yields were down and a global food crisis was developing, the issue of "hoarding" became an ever-increasing theme.

Hoarding, as a pathological mental disorder, was unknown before the Twentieth century. Throughout the history of urbanization, hoarding has been the ugly handmaiden of famine. In Shakespeare's *Pericles, Prince of Tyre*, the heroic Pericles does the opposite of hoarding. He saves the city of Tarsus from famine by generously donating the grain from his ship. But in the play *Coriolanus*, the aristocrats in Rome hoard grain in their stores as the commoners starve. The people swear vengeance against the greedy nobles, especially against Gaius Marcius Coriolanus, whose grain hoarding made him "a very dog to the commonality" (and I dare say put the "anus" in "Coriolanus"). It's worth noting that Coriolanus is openly contemptuous towards the rioters, even to their faces, because he claims that the plebs don't deserve grain since they haven't done military service – even though they had "become rakes".

As historians have often noted, famine is not just a simple lack of food, it is inextricably linked with social dynamics and the policies of the city-state. As the world started to learn that year, governments are the biggest hoarders of food in a crisis (even sometimes causing a famine in a time of plenty), but at the same time

they ruthlessly ban other hoarders and speculators. The rule is, as protectors of the state, the military feeds first (just as Coriolanus would have it).

Florence Nightingale, the English social reformer and founder of modern nursing, pointed out that famines in British India during the 1770s were caused by a "money famine". Money that should have gone to transport and distribute grain went to fund Britain's war in Afghanistan, and at the same time the Indian peasants were taxed until they could not afford food (even though there was enough to go round).

In the *Holodomor* of the 1930s, Josef Stalin used food as a weapon and killed about 13% of the Ukrainian population through hunger simply in order to punish independence-minded *Kulaks* who threatened his totalitarian authority.

Economists in this century have written that while hunger may still be a reality, famine is largely a thing of the past. They claimed that famines were caused largely by choice and bad government policy. So long as politicians refrained from price controls, export restrictions or tariffs, and forswore food distribution programs or punishment of speculators and hoarders, then free trade, and Adam Smith's "Invisible Hand of the Market" would feed the world. Merchants would rush to fill food shortages as they arose. Regional famines are one thing, but multi-breadbasket failures and the approach of a worldwide famine proved them wrong on all counts.

If crop yields are expected to be poor, and poorer still every year that follows for the foreseeable future, the market for food becomes inflationary. The longer speculators and hoarders held onto food stocks, and nutritional commodities, the richer they would be. So almost everyone that could hoard, did. As prices spiraled, scarcity dogged its heels.

In the past, governments could punish hoarders within their jurisdictions in times of famine, but in a global famine, multi-national corporations and international merchants were out of reach. By 2019, a mere ten multi-national food companies controlled almost every large food and beverage brand in the world. Just four agricultural and biotech companies dominated the world's commercial seeds and agrochemicals – Bayer, Dow-DuPont, ChemChina and BASF. They system that fed the world was completely opaque.

Governments were trapped, because if they tried to curb monopolization, speculation and hoarding then food and capital simply took flight. But if they allowed markets free reign then prices inflated rapidly. The only way to fight commodity price inflation was to reduce the supply of money through austerity and by raising interest rates and taxes, and that gave the food monopolies, speculators and financiers more fiscal power to play with while they impoverished the average person. In order to prevent bread riots in the cities, governments had to subsidize and ration food, and then begin food stamps and handouts.

As that game played out all over the globe, it became obvious that the richest countries, with the most spending power, would win at the expense of the poor. And the rich within the richest countries would win out overall. So Coriolanuses everywhere discovered how famine quickly turns into class war.

In Greece food riots in Athens spread to Thessaloniki and then Patras, and there was a mass breakout with a large number of fatalities from the notorious Moria refugee camp on Lesbos.

The government in Greece declared martial law and instituted strict rationing, and that was soon echoed across Europe from France, to Spain, Italy and a growing number of other EU states that were showing signs of weakness and collapse.
In Africa, the starving millions began to realize that their leaders had sold them out Xi Jinping's Belt and Road Initiative so that China could grow food in sub-Saharan Africa at the barrel of a gun. And soon it was obvious that the BRI rail and infrastructure projects were just put in place to ferry food from starving Africans into the mouths of Chinese. Civil wars broke out on the African continent like popcorn on a hot skillet and China held on to its African investments with a ruthlessness that beggared belief. The only barrier protecting Europe from mass migrations from sub-Saharan Africa was the increasingly hot Sahara. In South Africa *Apartheid* came full circle as White people had to start defending themselves against mass ethnic genocide. Truth met reconciliation in a bloodbath.
And End-times preppers in America discovered how you couldn't escape economic forces by hiding in a bunker. After they had eaten through their rations, they had to sell their guns and survival equipment to buy more food. Suicide rates in North America soared. The US government asked citizens not to keep guns in the home, because statistics started to show that gun owners had more than 80% chance of using them on themselves and their families rather than anyone else.
Anyone in America or Europe caught sitting on pile of food, especially farmers, soon fell foul of ever more draconian anti-hoarding laws. I felt deeply sorry for Greek-Anna, Antonis and Theo, because prison is no place to be in a food crisis. As they discovered to their cost during the collapse of Nazi Germany, as the state collapses, the guards get fed first and prisoners get fed last. As prices rise, the guards tend to sell the prisoner's rations on the black market and leave them with crumbs.
I guess statecraft and capitalism starts when they lock up the food, continues by locking up the land and the people, and ends when the food runs out.
Undeterred, global capitalism had started to devour itself. There are good reasons why they usually suspend capitalism after a natural disaster. However no one could effectively suspend capitalism in a *global* disaster. Capitalism, while cruel beyond belief, was a great engine for perpetual and unsustainable economic growth, but as food prices skyrocketed, it began to go into reverse and implode under the same forces that were previously responsible for its success.
Like everywhere else, we could not escape it on Agios Nikolaos.
As the tourist trade trickled off, so did the choices on the menu at George's co-op. I still ate there as often as I could afford, but unlike the other islanders, who ate free, I still had "tourístas" status in the village and so had to pay my way. Soon it wasn't worth ordering off a menu. It was just easier to ask what was available. Seafood was generally always available, but the price was astronomical. Although the locals ate free, none of them ever ate seafood, because it was considered a kind of "cash crop" to buy staples that were becoming scarce on the island – like beer, wine, sugar, rice and flour. Coffee was still in reasonable supply; I guess because it couldn't really be used for sustenance. But the truth soon became inescapable – we were running out of food.

This time, it was Father Chryssavgis who called a town-hall meeting (in the schoolhouse) to discuss the crisis. The upshot was that the people decided to appeal for help to the Greek government.
Personally I didn't hold out much hope, because I knew there were already food riots on a continual basis in Athens. So I was rather pleasantly surprised when a government official duly arrived on the island on a special ferry.
Anna and I watched from a discreet distance as George, Father Chryssavgis and an informal reception committee met the government official at the dock. He spent the whole day making a thorough inspection of the island's available food stocks with a clipboard and apparently left hardly a stone unturned. At lunch he was given some coffee, a thin slice of orange-cake, and the sorriest chunk of stale bread anyone could find, just to prove a point.
When he left at the end of the day they asked him excitedly if we qualified for food aid. He was non-committal, warned not to expect too much, and said that he would file his report in Athens and they would find out in the next few days.
With such low expectations, I was astounded that two days later the government communicated that they were sending a container on a ferry the next day. Good as their word, a ferry with a crane and a large container on its deck hove into view on the designated morning. A grey Coastguard patrol boat with white and blue markings was escorting it.
I was impressed at how food had become so precious that it now required two-dozen riot police in full gear to guard it. They were arrayed along the deck and poured ashore to form up in a phalanx on the dock. It was rather melodramatic and exciting and at least two hundred villagers gathered round to get a good look. The guard commanders had to push them back so there was room for the crane to unload the container. The same government official that had made the assessment was there with his clipboard. He motioned to some of the men to open the container and an expectant murmur went through the crowd as they strained to see what had arrived.
The container door swung open to reveal that it was packed to the ceiling with blue crates. Clipboard Man directed workers in overalls to start unloading the crates on the dock in neat rows. As they did so a growing hush fell over the crowd. All the crates were empty!
Puzzlement slowly turned to horror as the onlookers gradually started to realize what was happening. Angry voices started being raised and the riot police began beating the crowd back with their riot shields and batons. On the patrol boat one of the crewmen swung a heavy machine gun onto a mount and cocked it threateningly. People started run into the village and up the hill, trying to head off the armed men before they could get to their houses. Some even started barricading doors.
But Clipboard Man had the whole inventory and starting from the mini-market at the harbor, they systematically moved back up the hill carrying off any foodstuffs they could lay their hands on.
I saw Father Chryssavgis go down on his knees and raise his hands to heaven. Old folk began wailing and falling down to pray with him. Woman were screaming and crying and the men were either pleading or shouting angrily at the police. Anyone with goats or sheep that could get to them in time, began opening their enclosures

and driving them out towards the hills. Some people were even trying to scatter hens and geese, but they just rose foolishly in the air or ran in circles. I even saw four policemen use their batons on Yannis and Kostas' as they picked up hens and tried running the gauntlet to hide them somewhere.
Even though it was safely tethered, a dog was shot dead trying to protect his owner's two donkeys. The only pony in the village was also unlucky that day. He was stabled just near the church and I had often stopped to feed and pet him on my way up the hill. They led the pony and two donkeys down to the quayside and lined them up. Then the guard commander pulled out his handgun and dispatched all three of them one by one with a sickeningly loud, *Pop!, Pop!, Pop!*
The carcasses where hoisted dripping onto the deck of the barge by crane.
When Barcelona-Anna and I could not bear any more, we went to my boat and went below. We put pillows over our heads and I hardly looked up when I heard boots stomping on the deck above. Somebody said something to us in Greek to which I shouted back impertinently, "Just fuck off!"
Rather amazingly, they did.
When the dreadful day was finally over, people crept out to take stock of what was left. There was precious little.
As a mercy, they had left some of the chickens. A few goats and sheep had escaped and they could be rounded up or hunted later if they went feral. No flour, grains, beans or any dry goods were left in any great quantity. They left the hard alcohol and sprit, but took any beer or wine they could find. They left the bottled water, but they dealt a serous blow to the diesel stocks. Although the island was potentially self-sufficient with water, the borehole pump needed diesel in order to run. So without diesel the island was effectively dry. Diesel was also needed for the power generator.
Diesel fuel was rationed, expensive and already hard to get even on the black market. The ferry hadn't brought diesel for months and there was no telling if it would ever again. At this point *Pizzazz* and my boat were the only visiting yachts in the harbor, even though it was still notionally in the sailing season. We both had full tanks of diesel, but they were needed for the boat and wouldn't have made a lot of difference for the outsized demands of power generation or water pumping.
Both boats had solar panels and water makers. I could make a modest 30 liters per hour when the sun shone, and *Pizzazz* could make double that. So together we offered the villagers the saving grace of a trickle of fresh drinking water to survive on. But we realized water would have to be strictly rationed from then on.
Our services providing water were enough for the village to announce happily that Anna and my status had officially be upgraded from "tourístas" to Newcomer. They seemed to think that with solar and a water maker we could provide drinking water indefinitely, but I confided to George that we could only make water so long as the water filters lasted. We could try to clean and reuse then for a while, but with slim chance of finding new filters, at some point they would become useless and the water would turn foul and become undrinkable. Still, I estimated we had enough spare filters for a year or more.

Without power, little water, and most of the food stocks gone, the majority of the villagers decided to pack up and move to the mainland. Most of them, especially younger people, elected to move to Athens.

Personally I thought that was a terrible idea. As we had just seen, governments tend to raid the countryside in order to appease unrest in the capitals. After all, people dispersed out in the country and on outlying islands can't mount much of a rebellion. The danger is that as the countryside gets denuded, rural refugees flock to the cities and make the urban problems that much worse. The downward spiral continues as governments raid the countryside in order to feed the cities.

The way I saw it, at some point the center would collapse, and that would relieve the outlying areas. At that point, any refugees from the cities making the back-migration to the countryside would be a wretched, diseased and decimated bunch indeed. They would not be welcomed back into the villages.

Obviously I had ulterior motives for staying on Agios Nikolaos, but even so, I thought it was a better survival strategy to eke out a living on an out of the way island or rural backwater and avoid cities like the plague, because, more probably than not, plague itself was literally bound to enter the picture at some point.

Cp. 10. Ghost Ships

Finally, we got some good news. George's daughter was released without charge. Anna arrived back on the island in good health. The police could not pin anything on her and some of George's more influential relatives in Athens either bribed or legally forced her discharge. But there was no news of Antonis and Theo.

George and his family held a celebration for Anna's return and his wife cooked fish. His son Kostas served the villagers unlimited amounts of ouzo and his daughter Maria served a treat: Greek yoghurt ice cream made with mastika resin, honey and cherry sauce. The ice cream was made in the freezer on *Pizzazz*.

I marveled at our resilience. On the brink of running out of food, we could still have a party almost as if nothing was the matter. Even the one remaining bakery had not closed. They continued making a rough substitute for bread by grinding bark, buds, wild grass seeds and chaff that was baked using wood collected in the forests. A long folk memory of hardship preserved in songs and rebetiko music, along with strong social bonds held Greece together. However in other countries the tide of social disintegration was taking a toll in places that had modeled themselves on American-style individualism, materialism and consumerism.

In Athens it was a different story to our island. Society was falling apart. Anna reported that the news was being heavily censored and the Greek government had all but collapsed in a fiscal crisis. The military was running the show under martial law and government employees were not being paid. Welfare and pensions were suspended, universities were closed, and hospitals were turning away patients. Food had run out in the shops and with strict rationing in place the only way to survive was to buy food and fuel on the black market. Riots and police clashes were a daily occurrence on the streets and rumor had it that the army was forcibly drafting young people simply to get them off the streets.

Anna had managed to secure George some of his insulin medication on the black market and he was overwhelmed with gratitude because he said he expected that would be the last he would probably get.

With the world breaking down and power cuts everywhere from disruptions in fuel supplies, everyone generally expected that the Internet and cell phone networks would go dark at any moment. But it never happened. It turned out that they had built the Internet and cellular networks to be exceptionally robust. Nothing seemed to affect satellite communications and the GPS systems either.

The reason was that they were part of the military security infrastructure, and so unlike commercial operations, governments had ensured that, as part of strategic communications infrastructure, all the systems the military relied on where built with nuclear power and solar backups and huge amounts of redundancy. So crypto currencies and e-commerce survived far beyond public expectations. On our boats Anna and I had solar power and satellite Internet connections, so even if the cell phone towers went down, we were still connected to the world.

With all the chaos going on it was surreal to watch the Summer Olympics in Tokyo go ahead with Blitz-spirit, treating *Abrupt heating* as if it was just a minor inconvenience. Event after event was canceled due to wet bulb temperatures that would have made them lethal for contestants. The organizers simply moved crowds indoors and mandated air-conditioning. Workers and security personally moved around in white climate-controlled suits, in a bizarre commitment to the belief that "the show must go on." At no point did they show any hint of realizing that they were making a parody of what our civilization had become. In England the Guardian newspaper summed up a British gold-medal win with the headline: "Mad dogs and Englishman go out in the '*Abrupt heating'* sun."

During the opening ceremony flags were flown at half-mast in recognition of the mass die-offs from heat waves when the skeleton teams from India, Pakistan, Saudi Arabia, the UAE and Kuwait marched past. People stood up and broke into tears when they saw the Iraqi team with only one, lone, die-hard athlete bearing the national flag proud and high.

I watched the event on the Internet with the two Annas and George, and I think he summed it up for all of us when he said, "This planet is insane."

Yet at the same time a long-standing insanity was actually being corrected. Thankfully, the insanity of fish farming or aquaculture came to an end in the local area.

Aquaculture started in Greece thanks to EU subsidies and a cheap credit binge during the booming growth in the 80s and 90s. All over the world the public was sold on the idea of farmed seafood as a sustainable and eco-friendly alternative to overfished wild stocks. The cerulean waters of the Mediterranean were turned grey as every inlet and idyllic anchorage available was turned over to unsightly and ecologically harmful fish farms. Soon 70% of Greek fisheries production came from aquaculture. Still, it was not economically viable and it never took off quite as economists and government planners had hoped. Yet it was touted as lifting people out of poverty, helping to replenish wild stocks and providing a sustainable source of affordable protein.

All lies of course.

EU subsidies also ensured that the Mediterranean fishing fleet was three times bigger than was sustainable and the wild stocks were soon fished out. And the farmed European bass and bream were fed on anchovy pellets that came from unsustainable harvesting off Peru and Chile. All that fish farms were really designed to do was to convert a fish that people didn't like (anchovies) into a fish they did like (bass, bream etc.). The European Maritime and Fisheries Fund (EMFF) funneled in billions to support the dietary preferences of seafood diners in Europe. Then in 2019 the Turkish Lira sank and Greek fish farming sales could not keep up with cheaper fish farms in Turkey.

With the fiscal crisis and fuel shortages in 2020, the fish farming companies operating around Agios Nikolaos started to go bust. The water in fish farms needs to be aerated and that couldn't be done without a constant and reliable power supply. High concentrations of fish produce a significant amount of condensed feces, often contaminated with drugs, so fish farms have to be moved continually, so

they could contribute to habitat destruction in a new area. But that took energy and financial capital, which was in short supply.
Companies started abandoning fish farms and so local fisherman moved in quickly to release the farmed fish into the wild, hoping they would replenish wild fish stocks.
That turned out to be a big mistake, because farmed fish are not healthy, and have things like infectious salmon anemia, pathogens and sea lice. So feral fish wound up giving wild fish stocks deadly infections. The farmed fish were also genetically engineered, and most of them were deaf due to inbreeding defects. So they were not really viable in the wild and didn't last long anyway.
Overall, seeing the commercial fishing fleets disappear due to a lack of subsidies or fuel made the fishermen hopeful, and they prayed daily for the return of the fish stocks and for the health of the sea.
Around this time some of the local fisherman hatched a plan to capture a foreign pleasure cruiser for cash. Occasionally during the summer the odd billionaire or two would cruise past in the Ionian, or even occasionally stop in the port.
I only heard about it second hand, but apparently local fisherman had approached a German motorized gin-palace anchored in a bay on one of the neighboring islands, offering to sell them a modest catch of sea bream. The owner and his guests were sipping champagne on deck and gorging themselves on haut cuisine, or so the story went.
They went out of their way to tell the fisherman to get lost, and even scornfully showed him the endless stocks of frozen fish they had on board.
Fueled by resentment at their mockery, the fisherman decided to get together some of his buddies, put the German boat in jeopardy, and then "rescue" it and claim the salvage rights. Greek sailors and fisherman widely believed that Greek maritime law stated that any boat rescuing another one and taking it under tow could claim ninety percent of the rescued boat's value as salvage booty. In truth, the law was more nuanced than that. There was some truth to the belief, but the boat being rescued had to be in dire and imminent peril and the salvage vessel had to risk life and limb to save it. So it was not quite as straightforward as most fisherman commonly believed.
The folklore amongst British sailors was that it all depended on who passed the towrope to whom. The widely held myth was that if you handed a towline to your rescuer, then the ninety percent rule did not apply. But if you accepted the line from your rescuer then you were at risk of having to pay out.
Which was simply not true.
Nonetheless, the fisherman came in the night and gave the German vessel similar treatment *Liberty's*. They strung a fishing net across the bay just below the waterline when a storm was brewing up. The German boat dragged its anchor in the night (with some discrete assistance) and they had to weigh anchor and steam out to sea in the dark. The fishing net did its job and the vessel's propulsion system was soon disabled when it snarled the propeller and wrapped around the rudder. Soon the German motor vessel was drifting helplessly towards the rocks as planned.

At that point the "friendly" fisherman saved the day and towed the boat to safety in Nydri. Then he called the "friendly" Coast guard and they impounded the German boat until the hefty demands for salvage were settled.
In the end the fishermen got a lesson in dollar diplomacy. The rich owner bought his way out of the situation and sailed away a few days later without the fisherman getting so much as a dime for their trouble.
The owner paid a high price later when he called in at Aetolofos Bay later on. From what I heard three fishing boats threw Molotov cocktails on his deck. The rumor was that when the owner and his crew tried to escape the fire by jumping overboard, but the fishermen drove them underwater with boat hooks and drowned them.
I saw the burned out wreck of the German luxury vessel aground on the rocks. Word soon spread, and that was the last time I ever saw a German ensign flying in the Ionian.
Mid-summer was so hot the bees began to die off and we worked together to hand-pollinate fruit trees. There were big changes in the insect world. While bees died off and left us without honey, ants suddenly proliferated. Mosquitoes came out all through the winter, presumably thinking it was springtime.
Soon the vegetation on the island dried out. We kept a watch for wild fires and filled buckets with sand for fire security. Desiccated frogs and geckos were a common sight along the mountain paths.
When the garbage ferry stopped coming we started burning trash, just like any Pacific island. There was far less wastage or garbage now, and we were very careful to control open fires.
Food stocks were low, but we collected mussels, crabs and sea urchins to make *uni* and seafood stew. I even saw a man dragging a dead snake on a string through the village to the pot. He beamed broadly with pride in this trophy and said to me, "We call it 'snake without eyes'".
I think he meant a "blind snake". But I thought a "blind snake" was a little earthworm-like thing of less than a meter, and what he was dragging was a monster about a meter and a half long. "I caught a sea bass," he said, which is a popular idiom in Greece for an unexpected windfall.
Either way, if it crawled, slithered, flew, hopped, swam or ran, we ate it without asking too many questions.
Visitors became more rare by the week, but when they came we traded goods and it worked out surprisingly well. In a lot of ways, the elders in the village said that we were just dialing back the clock a little. One old lady, who didn't speak a word of English, told me through George that the life we were leading was not hard at all. "This is how my grandmother lived," she laughed. "We are going back in time to live with her spirit. She welcomes us with open arms! If the Turks or Germans don't come back, we have nothing to worry about!"
But by late summer we soon got a reminder from the modern world that we were not simply winding back the clock.
A ghost ship turned up one day drifting in the channel between the islands. It had come on a southerly wind and there were more to come later.
At first we didn't understand what was happening.

The yacht was a shambles and the sails were in tatters.
It was a common enough *Bavaria 45* and must have been new not too many seasons ago. There it was, adrift, stripped almost bare, it's boom flapping and it's hatches lost. No one had the inclination or could spare the fuel to tow it anywhere, so we just let it drift on its way.
By the time the next one showed up we had heard through the rumor mill what was going on. There were crop failures in North Africa and refugees were starting to come across the Med. With so many cruising and charter yachts in furlough or "on the hard" that season, enterprising Greeks were starting to steal pleasure boats from absentee owners to sail them to Africa to pick up refugees for cash. According to hearsay the going rate for illegal transport from Africa to Europe was the passenger's weight *in gold*! The traffickers would put the refugees ashore at night and then just set the boat adrift and continue overland rather than be caught at sea after a drop.
With such huge potential gains, more and more desperate Greeks (and desperados from Albania and the Balkans) were willing to steal boats to make the trip.
According to the law Greece was supposed to register all asylum seekers and arrange for them to be distributed throughout the EU. But Greece was soon overwhelmed by the massive influx and other European countries grew frightened and flouted the rules, effectively barring refugees from entering their countries by tying Greece and other "buffer" states up in never-ending red tape. Greece pleaded to NATO to ramp up coastal patrols and defenses against the waves of migrants, but there was little they could do but turn boats back, in which case they simply ran the gauntlet again and again until they got through.
Unable to intercept them at the coast, Greek police found it was easier to try and round people up as they headed to the border, or made mass arrests in squats and tenements in Athens. The infamous holding pens for refugees, or what the government still coyly called "asylum seekers", like Moria, on the Greek island of Lesbos, were filled to overcapacity long ago. So the government was forced to make ad hoc mass detention camps and increase the penalties for trafficking refugees to draconian levels. However that just caused a vicious cycle, and the more onerous the penalties got, the higher the market price, and hence the more attractive it was to traffic refugees.
Making the punishment for trafficking harsher had some grizzly side effects. Soon it was standard practice for migrants to be chained together by the ankles with huge weights at either end of the boat. In areas where the risk of interception was high, the passengers were made to sit at the edge of the deck on the toe rails, with their legs chained together and dangling over the side. The deal was that if it looked like the traffickers were about to get busted, then the two weights were heaved into the water to get rid of the "evidence." That was all agreed up front and the refugees consented to the risk of being thrown overboard as part of the deal.
I can only imagine what it was like for them as NATO reconnaissance planes on patrol swooped low over them on inspection runs, as they often did at that time.
We had a storm one night and one of these stolen refugee yachts came into port to take shelter. It was crewed by three Albanian traffickers, just young kids and not really sailors, so they were scared out of their wits. They had about fifty people

from Tunisia on board. They had tried to go ashore on the mainland but could not make landfall because they were discovered and the police tracked them from the air.
Once roused, the villagers opened up Theo's place for them to camp in and gave the refugees bedding and some food and water. They were all severely dehydrated.
The next day Mr. Panos instigated a fierce argument in the village. I didn't need any translation to figure out what it was about. I could see from his ranting and from his Fascist son's folded arms and scowl at the rest of the villagers what he was saying. Even George's son, Kostas was arguing back.
I knew that "astynomía" meant "police" and so I knew that's what Mr. Panos was talking about. Obviously our supplies of food and water would be stretched with the new arrivals, but I could also guess that if we tried to get rid of them by taking them somewhere else we might be considered traffickers ourselves if we were caught. And if they stayed then perhaps we could all be accused of harboring refugees and assisting the three traffickers.
The easy option was to report them to the police and then turn them over if anyone came round to arrest them. But at that stage no one was in much doubt what their fate would be in a refugee camp.
I could see that George was arguing vehemently for the refugee's safety. Things were really starting to get heated when Father Chryssavgis appeared and did his usual trick of pouring oil on troubled waters.
Tempers still flared as the throng broke up.
"What's the verdict?" I asked George.
"These malakas," said George. "They want to wait a few days and see if the police turn up. If nothing happens we will vote to decide if they stay or go. If they get the thumb's down they want to call the police and report them. After that, it's up to Fate."
"Do we have enough food and water for them to stay?" I asked.
"That is not an issue," said George. "They are human beings, for God's sake. They can have my food if it means saving them from the camps. Everyone knows what will happen in those camps eventually. Our dignity and honor are more important than food."
As it turned out, Mr. Panos did not intend to let the matter rest. He and his son Yannis had contacts in the military and the police and so they secretly pulled strings to get the authorities to come and intervene.
The next day two massive inflatable boats roared into the harbor with soldiers in balaclavas. They arrested the three traffickers and took them away with their hands tied behind their backs with plastic cable ties. The refugees were herded aboard the boats in a frightened huddle. Some of them had children with them and they were yelling and screaming at the top of their lungs.
Unfortunately for Mr. Panos, the head of the unit exposed him. He pulled off his balaclava to reveal that he was Mr. Panos' cousin. He exchanged words with Mr. Panos, Yannis, and no one else, so the villagers were left in no doubt that this was all Panos' doing.
Mr. Panos asked where the refugees would be taken. The commander said that they would be deported to Turkey, because that was "the standard arrangement now."

When the refugees boarding the RIBs heard the word "Tourkía" they knew exactly what it meant. They immediately kicked up an uproar and started saying in English, "We are not going to Turkey!" and "Shoot us here! But we will not go."
"Get in the boat! That's an order," shouted the commander.
And the guards started hustling them on board using their batons.
The boats roared off to the sound of "Allah Akbar!" and some of the women were ululating. Observing the whole thing was emotionally harrowing to say the least.
George was not on the quayside to see any of this, and his son Kostas ran off to tell him what had happened. A few minutes later George came storming onto the scene, shotgun in hand, yelling for Mr. Panos.
This time Father Chryssavgis glided so swiftly into view it was almost as though he arrived on a magic carpet. George cornered Panos under a tree and Father Chryssavgis had to hold the shotgun barrel up to keep it from being shoved in Panos' face, or worse.
George was yelling at Mr. Panos that he was a "malaka" who had sentenced fifty innocent people to their deaths by sending them to Turkey.
It takes a little background information to explain what the accusations were about. In what will surely be Germany's next great contribution to mass genocide, Angela Merkel set Turkish dictator Erdoğan up in the highly lucrative privatized-prisons business back in 2016. Although Turkey's relationship with Europe was fraught, Erdoğan needed the money and Merkel desperately needed to stem the tide of Syrian refugees flooding into Germany, or else lose her job. So the EU agreed to pay Erdoğan €6 billion to hold 3.6 million Syrian refugees in detention camps within Turkey and stop them migrating to Europe.
Obviously the deal was phrased with slightly more window dressing than that. The Emergency Social Safety Net (ESSN) was presented to the world as a cash assistance program for refugees, but since the refugees were under lock and key in concentration camps, they had to spend the assistance they got in rent for their imprisonment and for food and medical assistance in government shops and medical facilities. So basically it would have been much less of a charade if the EU had just cut straight to the chase and put the money directly in Erdoğan's pocket.
The problem with paying for someone to incarcerate your problems for you is that you have to keep paying and the payments can't stop. By 2019 Turkey and the EU were already bickering about who owed what for the unholy deal.
Erdoğan, was fully cognizant of the blackmail potential of having a horde of 3.6 million people to unleash on Europe if the EU didn't do his bidding. So he was soon pressuring the EU and the US to allow him to begin ethnic cleansing of Kurds from their lands in Eastern Turkey.
But apart from that genocide, this whole sordid situation was a setup for an even bigger genocide. Since Turkey couldn't afford to feed 3.6 million hostages, or ever let their cash cow go, it was incumbent on the EU to pay blackmail, potentially forever. The dreadful question hanging over all this was, with Europe fast running out of money, and unable to feed its own people, what would happen to the 3.6 million Syrians, whose ranks were now swelling with captured Kurds and Turkish enemies, and more recently waves of influx from Iraq and Saudi Arabia after their devastating heat waves?

Erdoğan couldn't exactly let his captives out onto the streets, since they would destabilize security in Turkey itself. And no one else could afford to take them off his hands either. So that put him in much the same position the Nazis found themselves in back in World War II when they locked up tens of millions of people merely out of ideological conviction.

What happened in Germany is instructive. Germany made a lunge at Russia in order to capture grain and oil to feed itself and its huge prison population. When the Soviet scorched earth policy denied the Nazis any food, Germany was faced with starvation. The incarcerated masses couldn't be fed and they couldn't be released either (otherwise they might retaliate). So the result was predictable. About 11 million people died horribly.

I once heard that some of the architects of the mass executions in the Nazi labor camps defended their actions by claiming that it was an "act of mercy", since dying of starvation was so much worse. Maybe the lesson is not to lock people up in the first place. Yet if you don't, then how can you run a state?

I have trouble believing that someone as smart as Angela Merkel could not have foreseen all this way back in 2016 when she cut this deal with Erdoğan. I wonder where her conscience was, because she must surely have known that history was about to repeat itself. After all, she must have known that Erdoğan's concentration camps were built right on the very same ground as the first great genocide in modern history. The Ottoman Turkish government set up 25 concentration camps in the same spot as Erdoğan's camps. Then in 1915 they systematically began the mass extermination and expulsion of 1.5 million ethnic Armenians.

Greeks have strong feelings about the Armenian genocide, not only because of the ethnicity of the perpetrators, but also because Christian Ottoman Greeks were also victims at the same time, in what's called the *Pontic genocide*. This happened in conjunction with the Assyrian genocide, the Turkish mass slaughter of the very same people in Erdoğan's camps.

So one can only guess at what Merkel was thinking on the hundredth anniversary of these genocides in 2015, when the EU negotiated their pact with the Devil and gave him his thirty pieces of silver.

Of course the EU was in the same position as Shakespeare's Macbeth when he said, "I am bent to know by worst means the worst. For mine own good all causes shall give way, I am in blood stepped in so far that, should I wade no more, returning were as tedious as go o'er."

So technocrats in Brussels did what a logical cost-benefit analysis on their spreadsheets showed they should do. They just doubled down, sending Erdoğan ever more refugees and paid him on credit. According to their calculations, that would be more cost beneficial than dealing with an influx of migrants into European cities. Although Greek and Turkish relations were not good, Greece was sending refugees to Turkey.

As reports got out of the deteriorating conditions in the Turkish concentration camps, I imagine that officials in Brussels thought that was not a bad thing, because it was a deterrent to future refugees if they knew there was a high likelihood of being sent there.

But it serves as background for why George was yelling so hard at Mr. Panos. "You have sent them to their deaths, you malaka," he shouted.
At some point in this tirade a little girl came running up to get everyone's attention. She gestured for us to follow her up the hill. She took us to a small allotment behind one of the houses and pointed to a goat shed.
Slowly, from the smelly and dank interior, a family started to emerge from hiding. A Tunisian man came out with a woman in a yellow headscarf and her daughter dressed in jeans and t-shirt. The daughter looked like she was in her late teens or early twenties.
George handed his shotgun to Kostas and advanced and embraced the bewildered man. He shook his hand warmly, told him not to be afraid, and said that he was welcome. The Tunisian introduced himself nervously as Aziz, his wife as Fatma and daughter as Yasmine. His English was fluent and he turned out to be a highly educated man. Later on he told us he was well off in Tunisia. One had to be in order to be a refugee, he said.
George announced that the family would be housed in an old double story villa that had been empty for more than a decade. The absentee owners were in Athens and they left the property vacant for years because they had an intractable dispute over ownership. They had inherited the house from an old woman who lived there her whole life and died in her late nineties, but her heirs had no intention of ever living there themselves.
The villagers broke down the heavy door and found that the house was furnished in a haunted, cobweb-ridden, Miss Havisham sort of way. It was obvious that repairs needed to be done, and roof-tiles needed replacing. In spite of the heat the villagers lent a hand in renovating the property. All the materials were donated and the man who owned the hardware store not only brought them whitewash and brushes, he took off his shirt and helped them apply it too.
George took his shotgun and went back to find Mr. Panos and have a word with him. Greek-Anna told me he said to Panos that if the police come and lay so much as a finger on the new family, "he will use his head like a water melon for target practice and then feed his bones to the pigs."
No one, least of all Mr. Panos, had any doubt that George was being serious. Panos just looked contrite and downcast.
I have never seen anyone work so hard or be so grateful as Aziz. The family worked to revive the small vegetable patch around the house and the villagers gave them seeds and nursery pots of vegetables to plant, and they put up sun awnings against the heat and watered with buckets from anywhere on the island where they could find standing water. They collected dew in the mornings from tarpaulins hung to gather any moisture that was in the sultry morning air.
When Aziz was not working on his own house he worked tirelessly for other people until the heat of the day made it dangerous to stay outdoors.
I told George one day that I was worried about Mr. Panos' son Yannis. I had seen him more than once eyeing the family from a distance as they worked on their house.
George said that we should keep a good watch on him, but he thought, fascist or not, the boy probably meant them no harm.

I was rather surprised and relieved when I saw Yannis bringing a small gift of fruit to their door. Later on I noticed that he was actually helping them in the garden. A few days later I went back to George and said there was no need for concern. I had just seen Yannis and Yasmine walking on the path to the beach hand in hand. "Bravo!" shouted George. "Do you see? The power of love can make anyone change."

But Aziz and his wife Fatma didn't see it quite the same way.

They were strict Muslims, and when they found out Fatma flew into a rage and made Aziz go and remonstrate with Mr. Panos to tell him to keep his son away from their daughter.

Aziz was calm and full of dignified deportment about the affair. He wisely asked Greek-Anna to translate for him when he went to speak to Mr. Panos, because Panos' English was almost non-existent and Aziz did not speak Greek.

After a few solemn meetings the matter resolved itself. The two families gathered the village together to announce with great merriment that Yannis and Yasmine were to be married. The Muslim family toasted the union with tea, and everyone else raised a tumbler of ouzo.

All sides made significant concessions to allow the wedding to go ahead. In Islam, the purpose of marriage and family is to preserve the religion. Aziz and Fatma knew that the couple was not likely to carry on the Muslim tradition, but they consented to the union anyway.

There was also the problem of a dowry. Both cultures take a dowry seriously. Up until 1983, the dowry in Greece was even a part of family law. The only problem was that in Greece the bridal party pays the dowry, and in Islam the groom is supposed to pay a *Mahr*, or "bride price".

George smoothed it over by getting the villagers to agree that the couple would establish themselves in another one of the empty houses abandoned by absentee landlords. That house would be the dowry and the villagers would work together to fill it with everything the couple needed. In that way, George said, the couple is also married to the village. So they went ahead and selected an empty house and we planted the traditional wedding flag outside.

The families agreed to have a combined Greek and Tunisian wedding. The bride wore a traditional Tunisian red dress with a Greek veil (to avoid the "evil eye") at the ceremony and the two Annas and George's daughter Maria were bridesmaids. They wrote their names on the bottom of Yasmine's shoes and instructed her to spit three times after a compliment to ward off evil. Her mother put kohl black around her exotic-looking eyes.

George's son Kostas was Yannis' best man and he shaved him according to tradition before the wedding.

Tunisian weddings take place over seven days, so the Tunisian ceremonies started the week before the final Greek Orthodox Ceremony in the local church and the two traditions culminated and merged with the wedding feast on the last day. On the fifth day of the wedding Fatma did the henna ceremony and acted as the "Nekacha" (henna tattooer) and festooned Yasmine's hands and feet with elaborate patterns. The whole village, or what was left of it, attended church and Father Chryssavgis conducted the wedding ceremony.

Yasmine broke with the Islamic taboo on alcohol and drank from the “Common Cup”. The Common Cup was substituted for the Communion Cup specifically for interreligious marriages. Without being confirmed and baptized Yasmine was forbidden to drink from the Communion Cup.
The bride and groom lit candles during the ceremony and there was a moment of shock and excitement when Father Chryssavgis’ vestments accidently caught fire. Yannis and Kostas quickly stepped forward to put the flames out, but it was enough to make Yasmine shriek and many in the congregation gasped. There was a lot of murmuring behind cupped hands after this. Evidently many of the congregation thought it was a bad omen.
The whispering incensed Father Chryssavgis and he turned and shouted angrily at the congregation. I don’t know exactly what he said, but for a while the murmurs only got louder and some turned to groans.
However ominous, this mishap did not overshadow the celebrations afterwards. There was lots of plate smashing and we managed to hunt down two feral goats on the island and serve them as part of a feast, which the guests fell on ravenously. Amazingly, with food so scarce, the villagers managed to somehow source the honey, sesame seeds and quince for a wedding cake.
Musicians from the village provided the music and we danced the *Kalamatiano*, or "handkerchief dance", and the solo *Zeibekiko* dance with great passion. Then Yannis shredded his tie and sold off the pieces to guests in the traditional way of raising money for the honeymoon.
In order to invoke prosperity, money was thrown on the wedding bed according to the tradition, but no one could find any rice to symbolize fertility. In the end an old woman came and excitedly presented a single grain of rice she had found, and she placed it on the bed with great solemnity. It was very symbolic of our situation indeed.

The overwhelming summer heat eventually merged into the “The Year Without a Winter”. Record temperatures in Greece and the rest of Europe gave way to month after month of record high winter temperatures.
The two Annas and I followed the National Snow and Ice Data Center (NSIDC) interactive sea ice graph avidly and watched in awe as the trend line plunged below the 2012 record low ice extent in the Arctic. Even by July it was obvious that in September we would finally have the dreaded BOE.
The mainstream media, when it covered the topic at all, seemed to be taking it lightly. I was bowled over to see upbeat infotainment specials about the supposedly exciting commercial future that was opening up in the Arctic now that scientists said it was likely to go ice free in a matter of months. All one anchor wanted to know from a concerned scientist was, “And now for the big question that's on everyone’s minds: *How quickly can oil reserves be opened up in the Arctic and will they break the oil shocks we’ve been seeing?*”
It was almost a sanity break when we finally came across the headline: “The impossible is happening in Greenland - what it means for you.”
The ice sheet was breaking up like Greek halva under a giant hammer.

With rather surreal understatement, the writer humbly conceded that, "no one knows at this point how to re-freeze the Greenland ice cap."
My caustic comment was, "Next up, news from beleaguered Führer Bunker in the Last Days of Hitler: '*We may have to temporarily delay taking Moscow*. *Details to follow.*'"
Before *Abrupt heating,* studies were saying that, based on computer models, the Arctic Ocean would be ice-free between 2044 and 2067. Observational scientists making direct measurements were saying that it would be ice-free sometime between 2022 and 2025, just as Dean had said. The thinking was that the BOE would happen in a September, which is the month when the ice reached its minimum. Then, thanks to the greater solar absorption of dark blue ocean water, the Arctic would stay ice-free for each September thereafter and the ice-free period would increasingly come in the months before September and increasingly stay in the months after September until the Arctic Ocean was ice-free year round. What this gradual model failed to take into account was the feedback from a cascade of factors that included Arctic amplification, accelerated permafrost melt that released more methane, further melting of clathrates on land and under the sea, and the fact that the heating caused a loss of the aerosol masking effect as industrial and agricultural activity declined. There was an avalanche of self-reinforcing feedback effects that seemed obvious in retrospect, but at the time they took scientists and policy advisors by surprise.
I checked the charts on climatereanalyzer.org on a daily basis, looking in awe at the "2m Temperature Anomaly" in the Arctic and Greenland. The chart showed the temperature in degrees Celsius above the expected temperature and capped out at an anomaly of 30^{o} C above normal. Amazingly, I now found that the whole of the Arctic and Greenland were now permanently off the charts.
The Gulf Stream was also beginning to slow down and cause "weather blocks" around the world. Anomalous weather became "sticky" and hung around stubbornly for much longer than expected.
At around this time I almost lost my boat.
I got an email from my marine insurance company saying that the policy had been amended to exclude any damage or loss caused to the boat through an act of government law enforcement, state legislation or decree.
I thought it was odd, but didn't take much notice until I was out hiking in the hills one morning, trying to beat the heat before the sun got too high. I got back to my catamaran to find an official-looking pink paper taped to the cabin. Obviously a government official had come aboard uninvited and posted a notice. The gist of it was that it was to be towed away and impounded or destroyed if no one was on board within the next 24 hours. I could hardly believe my eyes.
I went to the online sailing forums and was astounded to see that people were screaming warnings in all caps telling owners to get on their boats immediately or get them out of the water ASAP or the government would sink them at sea.
The next day, at about the same time, I saw a tugboat and a Coast guard patrol boat alongside my boat as I was descending on foot to the harbor through the village. I broke into a run and arrived just in time to catch the Coast Guard about to tow my yacht away. I yelled at them to stop and they asked for my papers and did the usual

formalities. In the end I convinced them that I was the owner of the boat and living aboard.

It transpired that the human trafficking problem had become so bad that the government had started sinking any private vessels found afloat without crew in order to make sure that they couldn't be used to ferry refugees from Africa to Europe. I was starting to get an inkling of just how desperate the food and security situation must be in Europe if they were taking such drastic measures to stem the tide of human migrations into the EU. I thought, "This is what Ancient Rome must have felt like when the tides of barbarian hordes were gathering around it."

And then I noticed that the *actual* tide was rising.

The quay in Agios Nikolaos was previously quite high – more than a meter or so. I asked Barcelona-Anna if she had noticed how the sea level was rising. She said that she had been watching it too. In some places the water was right up near the dock, more like a pontoon in a marina rather than a fishing harbor. It looked like the first winter storm would deluge George's Taverna and the rest of the waterfront. The tables had been right up to the water's edge on the pebble beach when I had first arrived on the island. Now the whole beach had disappeared underwater.

Anna and I walked to the little cove to see how the tidemark on our "Hunger stone" looked. It gave me butterflies in my stomach when I saw it. From what we could tell the sea level had risen about a meter. There were only a few centimeters to go to our tidemark!

I said that we would have to watch it closely, but I thought that during the winter months the rise would slow, or maybe even stop. But as the summer wore on, the sun got lower in the sky and the nights drew in, but the heat and mostly cloudless skies refused to give way. It felt very odd to be sweating in shorts and t-shirts as we entered November.

On Tuesday, November 3, 2020, Trump was re-elected by a landslide in the 59th U.S. presidential election. One of the reasons must surely have been his choice of running mate: Utah Senator Mitt Romney.

Romney and Trump had an ongoing feud that went back to 2016. In the approach to the 2020 election, the rift was healed as a matter of convenience and Trump ditched Mike Pence as Vice President.

Romney had previously been one of the few Republicans in Congress who was willing to speak out against Trump. He played an important role in the Senate Trial for Trump's impeachment at the beginning of 2020 by holding GOP senators together and making sure there were no defections, so that the impeachment proceedings failed. In exchange for his support in the Senate trial, Romney was given the Vice Presidency at the end of the year. In taking office Romney was one step closer to fulfilling something he had been groomed for all his life. It was popularly called the *White Horse Prophecy*.

Since the 1950s, children growing up in Mormon households had been taught that Joseph Smith, the founder of the Latter Day Saint movement, or Mormon church, had made a prophecy that the US Constitution will "hang by a thread" one day and be saved by the Mormons through the efforts of an enigmatic "White Horse". Many believed that Romney was the prophesied White Horse. Perhaps he did to.

With the country politically divided and in economic turmoil, few could argue that the Constitution was not "hanging by a thread". Trump himself had made statements to the effect that he might not step down from the Presidency even if he lost the election in 2020. Mormons revered the US Constitution in almost mythical terms as a document inspired by God. If Trump challenged the 2020 election result it might well cause a Constitutional crisis and tear the nation apart. So Conservatives decided that the easiest way round the issue, and best thing for the country as a whole, was to just ensure that Trump won the election. A surefire way to do that was to have Romney as his running mate, since support from Evangelical Christians was easily sufficient to swing the election, and most Christians in the US had a very sketchy understanding of the details of Mormonism and just assumed that Mormons were just a brand of Christian fundamentalists like them.

As for Mormons themselves, Romney was fulfilling the prophecy at a time that was increasingly looking like the final Apocalypse and End of Days. According to legend, Joseph Smith had made the prophecy while gazing at a picture of *Death on a Pale Horse* by the artist Benjamin West. The horse in the painting was of course a depiction of one of the Biblical *Four Horsemen of the Apocalypse* in the *Book of Revelation*. The *Pale Horse* was the fourth and final Horseman called *Death*. So for fundamentalist Mormons things were coming together rather neatly. They automatically assumed that Trump would die in office, or finally get impeached somehow, and then Romney would succeed to the Presidency and fulfill the final parts of the prophecy.

With the food, water and energy crisis deepening around the world, countries were beginning to mobilize in response. Politicians understood well that the best way to stabilize the country at home was to vocally take on the role of "Stabilizer of the World" abroad. A national draft for the armed forces was proposed and approved. Since the dawn of civilization potentates have know that the best way to handle dissidents is draft, regiment and control them in the ranks of the military using the excuse that it was necessary for national security. So Romney was all set to be the ultimate wartime President.

And Mormon bishops were quick to point to *Revelation 6:1-2*:

> Then I saw when the Lamb broke one of the seven seals, and I heard one of the four living creatures saying as with a voice of thunder, "Come." I looked, and behold, a white horse, and he who sat on it had a bow; and a crown was given to him, and he went out conquering and to conquer.

A little-known fact is that the Mormon Church had a charity fund of $100 billion in cash. And since all that money was intended to be a war chest to be used for the Second Coming, Romney presumably had it at this disposal (just as soon as Trump fulfilled his Apocalyptic destiny and shuffled off the world stage).

As to the other Four Horseman, Pestilence had already made an appearance with the African swine fever virus outbreak in China in 2018, even before *Abrupt heating* began. Swine fever is transmitted by ticks and kills about 80% of the pigs it infects. Pork is China's favorite meat and before the epidemic it produced and consumed about half the world's pork. By 2020 Chinese swine herds had been reduced by half,

mainly due to culls to prevent the virus spreading. Criminal gangs started deliberately spreading the disease using infected pig feed and aerial drones in order to manipulate commodity prices. The pandemic soon spread to Australia and Indonesia, but America remained disease free. That provided an excuse for politicians hoping to stoke the flames of conflict by blaming the outbreak on biological warfare from abroad.

And who's to say the accusations were entirely unfounded?

A flaw in the Milliways doctrine was that any nation-state that thought it could possibly survive Climate catastrophe (maybe with a much reduced population) might decide to skew that outcome by accelerating collapse for everyone else. There was every indication that was actually happening.

Mutual aid evaporated and states were showing clear signs of getting sucked into a race to the bottom. The end of that competition was probably mutually assured destruction – the extinction of the whole human race as drowning nations tried to feed each other to the sharks.

If political advisors in America or China calculated that the "Hothouse Earth" we were heading for only supported say 100 million people, for example, then the temptation was to resort to weapons of mass destruction in a bid to ensure that each country's own native citizens were the only survivors. And the quicker one country depopulated another, the more habitat and land base left for themselves. Taking this kind of logic to its conclusion, it looked like the ultimate human survivors, the blessed ones, would be the ones capable of being the most evil. Psychopaths might eventually become the ones to repopulate the world.

Of course the ultimate depopulation event would probably be the Earth-flip. So George, the two Annas and I, frequently discussed the possibility of a nation deliberately trying to flip the global applecart early, as it were. Assuming a nation thought that it was in a preferred position for its citizens to survive, it might actually calculate that the sooner the flip happened the better. Covering the Greenland ice sheet with solar absorbing material, like black soot for example, might accelerate such an outcome.

Particularly suspicious was Trump's seemingly bizarre attempt to purchase Greenland. To most of the world it just appeared to be more of Trump's habitual buffoonery that seemed to start as a joke on Twitter and then get out of hand. But when we looked into it we found that the roots went much deeper. The US State Department put a lot of time and effort into the plan, so it wasn't just the whim of a crackpot. Eventually the whole thing ended acrimoniously when the Danish prime minister responded, "Greenland is not for sale. Greenland is not Danish. Greenland belongs to Greenland."

For our part we seriously started to wonder if it was the first step in a move to meddle with the Greenland ice sheet, either to accelerate the melt or delay it. We thought it was probably to accelerate it, but perhaps that was wish fulfillment on our part, because increasingly we found ourselves wishing the flip would happen soon. We went from fearing it to thinking it would be a blessed relief.

Cp. 11. Catharsis

Few people die directly from starvation. If you don't get enough food, what usually happens is that you die of a disease. While a person is healthy, their immune system is fighting a constant but unseen battle against illness. Like an army running out of ammunition, if your immune system cannot be replenished with a steady supply of provisions, then it gets overrun by hordes of enemy pathogens which run the gamut from viruses to parasitic worms.

Most people can survive from about three to eight days without water, but remarkably, people can live for months without food. What wreaks havoc on the immune system is extreme deficiency of essential vitamins and minerals.

Luckily, Barcelona-Anna and I had a supply of vitamin supplements on hand, and lemons were plentiful on the island, so everyone was spared from scurvy, which is a terrible disease caused by a lack of vitamin C.

The medical term for the symptoms of starvation is *inanition*. Inanition means "exhaustion from lack of nourishment."

It's probably easy to naively assume that the best way for a government to quell a bread riot is to simply give people food when they are starving. But since the time when states first started enclosing the land and locking up the food, warlords, potentates, pontiffs, dictators and presidents have know that there is a much quicker, easier and more cost effective way of pacifying the starving masses: *just withhold the food even more*!

Hungry people rebel; but starving people quickly succumb to exhaustion, apathy listlessness and withdrawal. For a government to hold onto power in a famine, it's usually simply a matter of getting over the hump between mass hunger and mass starvation. And the key to surviving that precarious transition is to keep the security forces well fed.

Feeding a bread riot is often just stoking the fire.

All over the world, self-deluded liberals who held quaint notions that their governments were "of the people by the people" were suddenly getting a crash course in Machiavellian Statecraft 101.

If deluding yourself was your thing, there was plenty of scope for that. To some, stressed communities appeared to be pulling together, self-organizing and sharing resources, but to others the same behavior was interpreted as people looting, ignoring property rights and descending into chaos and havoc without the rule of law. The media fueled the fire because they tended to play up the lack of law and order and highlight any interpersonal violence, however isolated or unrepresentative, which only served to heighten tensions and make things worse.

During collapse, one person's nightmare can be another's utopia. To some it was a "failed state", but to others it was a "liberated zone". Which movie you were in really depended on your own mindset.

In the usual natural disaster scenario, privileged people in Western-style representative democracies normally think of rescue as being taken out of a disaster

area that lacks resources, services, communications, power and the rule of law, and being taken back to them. In that sense, police, the military and emergency services could easily be seen as "rescuers". But when *everything* was breaking down, and place A was just the same as place B, then the idea of "rescue" lost its meaning. The forces of law and order simply became a liability.

Since government services couldn't rescue anyone, they reverted to the most basic instincts of the type of people who normally join them, which is the assumption that they have a duty to hold on to authority at all costs and maintain control at all times, right to the bitter end. They were like Bull Terriers that just didn't know how to let go.

This justice dispensing "hero narrative" of people who have a fondness for uniforms and power symbols soon blurs the distinction between citizens who are victims of a crisis and citizens who are enemies in a crisis. Networks of affinity and affection trying to organize themselves for mutual aid and self-support were easily interpreted as rebel enclaves, organizing into terrorist cells to mobilize against the state and the forces of social stability. A peaceful commune storing provisions of winter rations and prudently defending them with weapons could easily become an "armed gang of organized criminals hoarding food" in the mind of police officials who were taught to think that way. Indigenous people and harmless ethnic minorities were easily interpreted as "enemies" of the state and vigilantes murdering them were seen as the "good guys".

So in an paradox so apropos to irony-ridden governments, all over the globe states themselves were rapidly become the single biggest threat to social harmony, order and mutual aid, by simply trying to use an iron fist to establish their own version of stability, order and the rule of law. One is immediately reminded of the "take back control" narrative after Hurricane Katrina in New Orleans and the 1906 earthquake in San Francisco.

In the aftermath of the San Francisco earthquake, General Funston took command in the largest peacetime occupation of an American city and told his troops that the citizens were their enemy and they needed to control and contain them. The National Guard shot people on sight for looting or any "criminal activity" and thousands died needlessly for nothing more than petty theft. Most of the victims shot to death were people sifting through the rubble of their own homes. Instead of keeping "order", the shoot-to-kill proclamation caused havoc in the city and severely disrupted citizen-relief efforts, some of which were miracles of self-organization and mutual aid. To add insult to injury, Funston then ordered firebreaks to be made through the city using explosives, which ignited many more fires.

Now that things were collapsing internationally and on a broad scale, the luckiest countries were those whose governments collapsed, or were forcibly overthrown, early in the crisis. In places with strong governments, like in North America and Europe, people were finding out the hard way that the most dangerous actors in the wake of a calamity are the authoritarian-minded types who have the unshakable belief that people will behave badly and resort to savagery and barbarism in an emergency. Countless researchers have shown that the exact opposite is the case, and that barbarism after a natural disaster is usually caused by states thinking they are taking defensive measures against barbarism.

Calamity bred calamity, as more and more governments started weaponizing food to harm what they perceived as political enemies or destabilizing forces. It was increasingly starting to look like George Orwell was a utopian.
On Agios Nikolaos we learned to harvest olives and fruits before they were ripe and to hide them from raids and state food inspections. We grew tubers in weedy plots so they were out of sight and less likely to be confiscated. And we depended largely on seafood, even though the catches were poor. The seas were warming and starting to kill off the fish and bird life.
Without diesel, the fishermen were rowing their boats again like in the old days. But unlike in times past, the fish were harder to catch, and rowing took infinitely longer and yielded far less fish than using an engine.
All over the world, in the enforced idleness of poverty and hunger, the favorite pastime of the poor was to try and fish some protein out of the sea by any means possible, which only depleted stocks still further.
Villagers on our island were starting to behave like the inmates of a gulag. They began constantly talking about food and fantasizing about exotic food combinations. The combination of the heat and laziness from lack of food made people take to their beds during the day and the village was growing quieter and more like a ghost town. People were soon beginning to get too sick to go out. No one drank coffee or played cards or backgammon outside anymore.
With malnutrition the human body tries to preserve the human brain at the expense of the rest of the tissues and organs. As an organ, the brain is only about two percent of total bodyweight, but it consumes more than 20 percent of the body's energy intake. This energy comes mainly from glucose, but eventually the brain starts to consume ketone bodies as a source of sustenance as well as glucose. Proteins not essential for survival, like muscle tissue for example, are used first, followed by organs and tissue in hierarchical order according to their rank of necessity.
Something similar was happing to the village population in general. The older folk were slowly sacrificing themselves for the younger ones. They were eating less and less in order to leave more for the rest. Soon the very old were dropping like flies, and there was nothing we could do to make them eat.
My memory was starting to go, and my emotions were starting to get ragged. At night my stomach gave me heartburn from the lack of food, but as I got thinner it stabilized and then I found myself drinking water to try and reduce hunger pangs in the night.
News of cholera, dysentery and typhoid was coming from Athens. We all knew they would hit the island soon too. A group of the villagers tried to revive an old well and some tried extracting water from the borehole by hand. That immediately turned out to be a mistake. Fever broke out in the village and soon Father Chryssavgis was burying people on a daily basis. I stayed away from the funerals and nobody seemed to hold that against me.
At around this time we started talking openly to the villagers about the Earth-flip event. The reception was mixed. I guess there were so many rumors and apocalyptic prophecies circulating around that time that it was largely dismissed as

just one of many wild uncertainties and highly unlikely conjectures. Crazy news and theories came and went by the dozen, so what we said was unremarkable.
Although some people started to believe us because there was more and more strange traffic around the island. Something weird was happening, because a US guided missile destroyer came and anchored in the channel in front of the harbor. That had never happened before.
The numerals "107" were marked large on her bows. As far as we could tell from looking it up on the Internet, it was the *USS Gravely*. It was probably detached from the USS Truman aircraft carrier strike group, which meant that the fleet was possibly being redeployed to the eastern Mediterranean from the Persian Gulf.
Soon F/A-18F Super Hornets were flying daily sorties over Agios Nikolaos. There were daily mock dogfights overhead with ear-splitting roars as they thundered low over the crest of the island.
"Oh my god," I said to George, as we shared a pair of binoculars to see them, "you know I think maybe they intend to hold this island by force of arms!"
"Do you think they might try to evacuate us?" asked George.
"Anything's possible," I replied. "I mean I don't think any of us are very high on the list of the Chosen Ones. They might just sweep us out of the way."
"The malakas," George said under his breath.
Who exactly was on the list of the Blessed Chosen was hard to tell. For all we knew, Mormons might suddenly start being shipped to the island in bulk!
We really started to question exactly who was in on the secret when *Sailing Yacht A* turned up as well.
Russian billionaire industrialist and philanthropist Andrey Melnichenko named his futuristic mega-yacht simply *A*. *Sailing Yacht A* was probably the biggest and most luxurious sail-assisted mega-yacht in the world. And there it was one day anchored on the north side of Agios Nikolaos, flying the Bermuda ensign. Other super yachts soon started nosing around too. It could have just been co-incidence, but it was hard not to wonder what was going on.
With the thought that we might possibly be evicted or deported from the island soon, the two Annas, George and I started to think about where we could go in such an eventually. Barcelona-Anna in particular started to get what might be described as Earth-flip "fever". She became semi-obsessed with validating the work that Dean had done to come up with Agios Nikolaos as the global point of greatest survivability. While Dean had obviously used computer models and numerical methods, Anna took a more mystical and mythological approach. She felt her intuition could guide her to the PGS through paranormal insight.
"How many people survived the previous Earth-flip do you think?" she said to me.
"In Europe? Only about fifteen thousand, I guess," was my reply.
"They must have wanted to tell us about it, surely – to warn us."
"For sure," I said.
"Well how would an unsophisticated bunch of survivors warn future generations about the catastrophe that happened to them?" she asked.
It's interesting to note that the word "catastrophe" comes from the Greek *kata*, which means down, and *streiphen*, which means turning over. The Greek word *katastrophe* literally means "an overturning" or "a sudden end." It was originally

used to mean a plot twist in a drama or a complete upset of expectations. So the very word itself may be a legacy from the last Earth-flip.

Would humans at the end of the Pleistocene epoch have even known that the Earth had flipped on them? All they would have known was that there was a cataclysm of immense proportions, but how would they interpret and describe it?

I told Anna that since they had no writing, and cave art and symbols were probably not a recognized medium for exchanging stories, that they would probably pass down an oral tradition. And that seems to be what had happened. That's why flood myths are so common in ancient mythology. They generally took the form of a story about how humans had become impious or corrupt and then the creator god sends a flood to destroy the world in preparation for rejuvenation. There is generally a Noah-like figure who is forewarned and survives the flood by building a boat or raft and then finally repopulates the world.

One such Ancient Greek myth is the story of Deucalion and Pyrrha. Deucalion was the Titan son of Prometheus and Clymene in the Bronze Age. Pyrrha was born to Prometheus' brother Epimetheus, and Pandora. Pandora, of course, was the first human woman and is infamous for introducing evil into the world by opening a box or jar. Supposedly, after all the evils were unleashed, the last thing remaining at the bottom of the jar was "hope" – which logically makes hope evil too, according to the myth.

Zeus decided to destroy mankind with a Great Flood, because people had become mean, greedy, and disrespectful towards the gods. Deucalion and his wife Pyrrha were saved because they were the only righteous ones. He constructed a box and they floated for nine days before fetching up on Mount Parnassus in central Greece. Deucalion and Pyrrha then repopulated the world with men and women.

The problem with going back to these kinds of myths is that they don't provide many clues for how to actually survive the flood (other than being righteous and building some kind of ark). But Anna refused to give up.

She thought there might be clues in the Paleolithic cave art as to how the earth flipped. I explained to her that the Biblical Hopefuls that worked with Dean had already looked into that. They thought an important clue to the characteristics of an Earth-flip might come from images of the night sky painted in caves before and after the Younger Dryas. The problem was that not all scholars could even agree that the images in cave paintings were even asterisms. Some believed that the rhinoceros imagery in the Lascaux cave in France shows the northern hemisphere stars and constellations from 15,200 years ago. If so, you may think that is evidence against the Earth-flip hypothesis in general, since it could be argued that the rhino in the cave signifies the constellation Taurus, and according to the theory that should have been a southern hemisphere constellation at that time.

The problem is, all the interesting constellations of the Zodiac are actually visible from the southern hemisphere as well as the northern hemisphere.

The oldest known sculpture, the Lion-Man of Hohlenstein-Stadel Cave, dates back 40,000 years and is believed to depict the constellation Leo. But even today Leo can be seen in the southern hemisphere during summer and autumn. The iconic bull of Taurus is also visible during the northern hemisphere winter and spring, or the southern hemisphere summer or fall. So nothing is conclusive.

Unfortunately even asterisms like Corona Borealis (the Northern Crown), which are only visible in the northern hemisphere, have a southern hemisphere counterpart, with a similar pattern, called Corona Australis. Ptolemy listed Corona Australis as the counterpoint to Corona Borealis, so the whole issue is ambiguous.
Even the Summer Triangle is visible from southern latitudes, where it appears low in the winter evening sky as inverted, with Deneb below Altair.
As to the one constellation of significance that is only visible from the *southern hemisphere* – the Southern Cross – simply being in the pattern of a cross defeats its significance. Crosses in cave art in the northern hemisphere are so common no one would dare attribute them to being the Southern Cross constellation itself. There are 32 common symbols found in cave art throughout the world, and one of them is a cross or Cruciform (cross symbol). Because crosses are ubiquitous, they can't be ascribed any astral significance (even if they looked like the flag of Australia or New Zealand).
One thing I shared with the two Annas and George was a long harbored suspicion that the PGS was actually near the island of Crete, rather than Agios Nikolaos.
If one assumed that the flip axis was consistent (at least when the Earth's ice was melting rather than freezing) then I thought that the northern pole of the flip axis was probably about 400 km southeast of us near Crete. You see, Dean's estimate of the PGS being at Agios Nikolaos assumed a lot of human political responses to Climate change. The assumption was that governments would start massive geo-engineering projects and countries like India would begin solar radiation management that would change the mass balance in the Asian High Mountain region. The assumption was correct, because SRM was actually being done in the Himalayas, but the models assumed more gradual heating, which gave SRM more time. With *Abrupt heating,* geo-engineering projects were much less likely to be an influential factor, and so the flip axis was likely to be closer to the previous flips.
I had wondered about this enough to examine models without geo-political second-guesses, and found that a number of them pointed to roughly the same spot in the Sea of Crete, at the bottom of the Aegean.
It intrigued me enough that before even coming to Agios Nikolaos, I sailed to the precise geocorordinates just to scout it out.
It was amazing to find that there was something very special about this one specific location just off the coast of Crete near Rethymno. It was an almost magical spot. Lying ahull and drifting, I tried to get a sense of how the currents and winds acted there. Gradually my boat was drawn into a kind of nodal point, a sort of calm Lagrangian point of time, weather, current and marine life. There was something noticeably supernatural about that location. One could feel it intuitively.
I seemed to be at the cardinal point were the surrounding land geography appeared to make all opposing forces cancel each other out. Currents, waves, wind and weather converged and neutralized their opposing forces there.
It was winter and there were storms all around me. Crete, and the port of Rethymno, was covered in dense, grey clouds and rainy weather. On all sides there were showers, high winds, and waves. But at this one small spot the sky was always clear and the sun blazed down with dazzling light as if it was the eye of a hurricane.

It seemed to me that the swell came from four directions and cancelled its movement, resulting in clumps of slow-moving standing waves. Flocks of birds circled overhead and unusually large shoals of fish teemed in the water. A pod of dolphins seemed to make the place their home and frequently came frolicking around my boat.

I stayed there for three days, just lingering in the same position. There was no other marine traffic whatsoever. There were no magnetic anomalies so far as I could tell, but gradually I became aware of a strange natural phenomenon that I cannot explain.

The boat somehow consistently turned through 360° in exactly 24 hours.

At dawn, the bow was exactly due east, dead-centered on the rising sun. Then it followed the sun precisely until at noon the boat was facing due south. When the sun set, the bow was always pointed exactly due west. During the night it carried on turning clockwise so that at midnight it was facing due north. It carried on turning so that in was just in time to meet the sun as it rose in the east again. This pattern carried on for the entire three days I was there.

On the final day, the weather over the land settled slightly and the sun started to heat the water around my position so that a wintery steam began rising in the cold morning air. Then a huge, pancake-shaped, lenticular cloud formed overhead. As I started the engines and motored away, I could see that my position was marked by a cloud formation that looked like a huge towering ice cream in a cone, pointing straight down to where I had been. It looked like a huge flying saucer or UFO. But not the old-fashioned Jetsons type from the Sixties, but rather the shape currently in vogue with UFO spotters today – the ones that look like soft serve ice cream cones that hang in the sky the same way bricks don't (as Douglas Adams would say).

I was astounded to see later that a Greek News-in-English site carried a story with a picture of the cloud and the headline "A covered UFO or a UFO cloud? Rare, glorious phenomenon over Crete."

That gave me a few sleepless nights, I can assure you!

My story immediately appealed to George and the two Annas and they demanded to know the exact coordinates of this mystical spot. I fetched my logbook and found the entry quickly.

"35 41.598 N 24 34.707 E" I said.

Barcelona-Anna wrote it down on paper and then went to have a look on Google Earth.

"What about Santorini?" she asked.

"You mean the volcano? I think it's safe," I said.

Santorini, or officially *Thira*, is an active volcano and the site of one of the largest volcanic eruptions in recorded history. It destroyed the Minoan civilization on Crete about 3,600 years ago, and it was only about 100 km to the northeast.

I told Anna that I had done some research and found that when the Earth last flipped, precipitating the Younger Dryas, the volcano at Santorini remained dormant. To me that was evidence to vindicate the theory that we were roughly in the right global area for the PGS (assuming the Earth-flip was consistent). I guessed that if Santorini had come under any severe tectonic stress at that time, it probably would have erupted. The fact that it hadn't supported the idea that tidal and

tectonic forces were not very strong in the southern Aegean. Therefore we were probably in the right ballpark for the northern pole of the flip axis.
I also found it interesting that the Herodotus Basin, the seafloor under the eastern Mediterranean Sea between Cyprus, Crete, and Egypt, was the oldest ocean crust on Earth remaining under the sea. So it was a strange zone of crustal stability in a very geologically tumultuous region. Perhaps there was a reason for that.
I said, "Either way, 400 kilometers is probably not going to make a huge difference if it turns out Agios Nikolaos is the exact spot after all. It's close enough. And I think after the flip Crete would be a good refuge."
I told them that I had been to the sacred Psychro Cave on Crete. Deep inside, it was filled with the freshest, coolest water you could ever imagine. If there ever was a "Hothouse Earth" then the cave could provide shelter from the heat and unlimited drinking and irrigation water. If there was a "volcanic winter" then the island had fuel to burn to keep warm inside the cave. To me Crete seemed a perfect place to survive severe climate shifts. The wonderfully fertile Lasithi Plateau lies below the cave and has been occupied since Neolithic times. It is believed to be the last outpost of the Minoan civilization. The valley collects good rainfall, is full of Cretan flora and fauna, and there would probably be feral animals and even wild game to hunt or farm.
"Maybe the Minoans were descendants of people that survived the last Earth-flip by hiding out in caves on Crete. There are many, many such places, and millennia after the deluge, Crete, and the Lasithi Plateau, would have been a kind of Garden of Eden," I said.
Legend has it that Psychro Cave is the birthplace of Zeus – who we know today as *Deus*, Yahweh, Allah, or God. Of course, like most putative sites of legend in Greece, there are other contenders. One of them is the Idaean Cave on Mount Ida, just south and inland of the magical spot I found off the coast. Both caves have been used for initiation ceremonies, so my guess was that the two caves mark a split in an ancient mystery cult, and the original sacred site is Psychro Cave.
In the days to come, I mocked the two Annas and George good-naturedly because I said they were starting to get a mild form of *Omphalos Syndrome*.
Omphalos Syndrome is a belief that a hub or special spot is the most important place in the world. The rabbit hole they went down is the belief that ancient people must surely have tried to warn future generations and tell the righteous and worthy ones the secret place to be when the Apocalypse comes, so they could survive.
I told them if they went down that road they would soon turn a bit "John Nash." In other words, they would give themselves *apophenia*, which is a tendency to see connections that aren't warranted and to join dots that just aren't there. Great literature, like Shakespeare, the Bible, or the Ancient Greek myths is perilously close to random information, and so our brains naturally seek patterns in it which result in mistaken interpretations and fallacious insights.
I predicted they would see codes and signs everywhere, and that would lead them on a wild goose chase.
Omphalos literally means "navel" or hub. So if you are looking for the flip axis of the world, it's easy to interpret the many references to an "omphalos" in Ancient Greek mythology as an indication of a survival spot in the End Times. There are sacred

omphalos stones, or baetylus, in many ancient sites in Greece. These venerated objects of worship were probably meteorites, like the Black Stone in the Kaaba in Mecca that Muslims hold sacred. Because they came down rather dramatically from the sky, it's easy to see why they were held in such awe.

An omphalos is usually a place of sacrifice or offering. There is a famous omphalos stone at the sacred sanctuary of Delphi, the seat of the Pythian Oracle, on the southwestern slope of Mount Parnassus. After the Great Deluge, Deucalion, son of Prometheus, made a sacrifice to Zeus there in thanks for his deliverance from the flood. If Deucalion survived there, then maybe Mount Parnassus, in central Greece, was the place to be.

That got us on the path of thinking that perhaps we should sail to the port of Itea. But I pointed out that some scholars believed that the Omphalos of Delphi was transferred from Crete. According to Cretan tradition, the Omphalian plain on Crete was the center of the world, and not the stone at Delphi.

That fits with the older Greek mythology.

To newly domesticated humans, the healthier, more robust, hunter-gatherer ancestors of ours must have seemed like Titans by comparison. Legend has it that the tyrant Cronus, leader of the Titans, ate his children as soon as they were born. His mother, Gaia, personification of the Earth, prophesied that Cronus would be overthrown by one of his own sons, so he wasn't taking any chances. Cronus had risen up against his own father, the ruler of the universe, Uranus, and castrated him with a huge stone sickle that his mother had made for him, so he had every reason to be worried.

By the time Cronus had devoured five of his offspring, Rhea, their mother, was finally starting to find her husband's dining habits somewhat objectionable. With seemingly inexhaustible devious guile, Gaia cooked up a plan to save Rhea's sixth child, Zeus.

Rhea substituted an Omphalos Stone for the baby Zeus, wrapped it in swaddling clothes and gave it to Cronus to swallow. Baby Zeus was then hidden safely in Psychro cave to be brought up by a nymph called Adrasteia (which means "inescapable" and is an epithet of Nemesis, which is significant).

When Zeus grew up, he did indeed manage to overthrow his father. Using an emetic, he got Cronus to disgorge the Omphalos Stone and his five other siblings. They went on to defeat the Titans and Zeus became King of the Gods.

Couple that story with the Flood Myth of Deucalion, and the stories of his father Prometheus, and there is plenty of fodder for Omphalos Syndrome and apophenia.

I pointed out to George and the two Annas that the ancients probably didn't visualize the globe as spinning on its axis like a top in space, as we do.

But Barcelona-Anna argued that the *axis mundi* was an ancient concept, lost in animistic and shamanistic traditions – the very people she assumed would be the ones trying to transmit the information about the Earth-flip to future generations. The celestial or geographic pole, the "world pillar", as a meeting point between sky and earth, was one of the more enduring beliefs of ancient times. And the fact that it was occasionally catastrophically unstable, was an idea that had deep roots in mythology.

Anna pointed out to me how *Yggdrasil*, the "world tree", had played such a central role in Norse mythology, and the Norse version of Apocalypse, called *Ragnarök*. According to the Ragnarök myth, or prophecy, after a great battle many of the great gods die, including greats like Odin, Thor, Freyr, and Loki. Then a series of natural disasters is supposed to lead to the world being submerged in water. After the catastrophe, the world is supposed to be rejuvenated and repopulated by two human survivors.

This event is the "Twilight of the Gods" popularized by Adolf Hitler's favorite composer, Richard Wagner. When the Berlin Philharmonic orchestra gave its last performance in Berlin in 1945, eighteen days before Hitler shot himself, it played the finale from Wagner's *Götterdämmerung*, the "Twilight of the Gods", and then the Hitler Youth went round offering the audience cyanide capsules.

When I told Barcelona-Anna that, she burst out laughing.

I had to admit that she had me stumped with *Nidhogg*, or "He Who Strikes with Malice."

Nidhogg was a serpent-like creature that perpetually chewed at the roots of the world tree, Yggdrasil, hoping to damage and topple it. I had to admit, if ancient shamans were trying to communicate the dangers of an Earth-flip to future generations, according to their best understanding, that was probably how it would sound. It's also worth mentioning that Odin "sacrificed himself to himself" by hanging himself from Yggdrasil.

So we became convinced that the ancient shamans were astronomers, and that they would have known about the pole star and the rotation of the heavens, and they would have been keenly aware of a flip in the Earth's geographic poles after tumultuous natural events. We thought that the bird on the stick painted in the Lascaux caves was obviously meant to represent the polar axis and the pole star (Deneb).

The Lascaux Shaft Scene in France is probably the best known cave art in the world, and since it was painted around 15,200 BC, the artists were probably recording the new sky just after the Earth-flip, much as we see it today. Except at that time Deneb (part of the constellation Cygnus, The Swan) was the Pole Star. Precession of the Earth made Polaris the Pole Star in modern times. Yet clearly the ancient artists represented the pole with a bird (the star Deneb) sitting on top. It's worth noting that according to Norse legend, Yggdrasil had an eagle on top.

Apophenia aside, we convinced ourselves that, if we were forced to leave Agios Nikolaos, we would head for my magic spot off Crete.

George warned us ominously that he had run out of insulin for his diabetes and that his wife and son Kostas had fallen ill with the disease that was going around the village. He described them having symptoms of fever, abdominal pain and diarrhea with blood. I'm no doctor, but I could tell the symptoms were consistent with dysentery. Without any antibiotics there was little we could do except to keep them hydrated as much as possible – a difficult task with our limited water supply. I told George to wash his hands often and be careful of food safety since I thought dysentery was infectious.

About a week later, George's wife died, and his son, Kostas, also succumbed and died soon after.

We held a wake for them the night before the funeral. Three other people in the village had also recently died of the same fever, so we held a combined service for all five of them. One of them was Mr. Panos.
Father Chryssavgis gave a sermon and eulogy for the victims. They were lying in open caskets facing east, with their feet towards the altar. At the graveside each of us placed a flower on the caskets. Father Chryssavgis gave the *Trisagion* (Thrice-Holy) service over the graves. Although it was late in the year, it was so hot that more than one of the mourners fainted.
In the days to come, more people were destined to die. I found myself called upon to dig graves. People were starting to feel weak and apathetic at that stage, and we could only work for a brief spell with a pick or shovel until we had to take a break. Over the weeks the graves became shallower and shallower and the churchyard was running out of space. I suggested that in future cremation might be a better option, but the more devout older folk would not countenance the thought.
For a while it looked like disease would take us down one by one until none of us were left (something like an Agatha Christie novel).
I had expected that the sea level would stop rising during the winter, but it just kept on coming up. The quayside finally had only a few centimeters of freeboard and water had breached parts of the harbor what were lower than the rest. I realized that at some point the bollards on the dock would be under water, and there would not be enough freeboard to fend off against. *Pizzazz* had the same problem, so Barcelona-Anna and I went out in the dinghy to lay out kedge anchors to hold us each off the dock. We were just in time, because a fierce storm rolled in which brought the waves crashing over the breakwater and churned up the water in the harbor so it became very uncomfortable on the boat. To be honest, by that stage I was itching to leave harbor, but the villagers were still relying on me to make fresh water for them. Without *Pizzazz* and my boat the villagers would have all died within a week. As the weather turned and became cloudier, I had to manage the solar power carefully in order to have enough energy to run the water maker.
The storm that blew in sent water crashing over the waterfront around the harbor and wrecked the storefronts there. George's taverna was flooded and the damage was irreparable. But he hardly seemed to care.
George himself seemed to be going downhill. He spent more and more time at home in bed. Things were coming to a head.
Just as we seemed at our lowest ebb, a US Navy patrol boat came and dealt the coup de grace. A navel officer came ashore and told us that NATO was evacuating us from the island for unspecified military-strategic reasons. It was December 14, and we were given until the end of the year to prepare for our departure. At that stage most people seemed too listless and withdrawn to protest.
I asked were we would be taken, and was told that we would be "evacuated to a secure location."
I took the officer aside and told him that we had a lot of hungry and sick people on the island, and asked for medical assistance, water and food aid. He promised me that would be taken care of when we evacuated. But he warned me that everyone would have to be vaccinated before we left the island. He said the vaccination would

be combined with a RFID chip and we would have to submit to a medical exam and a DNA test.
"What if we refuse?" I asked.
"In that case, we are ordered to isolate you in quarantine and keep you in detention facility indefinitely," he warned. "Look pal," he said, "Trust me on this one. At some point you are going to want that chip in your arm to protect you from being taken out by autonomous killer drones. The smart thing to do is make sure you get one."
That afternoon I went to visit George to tell him the news.
No one answered the door, so I opened it and went inside. I went upstairs and found George sitting in a chair on an upstairs balcony. Although it was warm, he was wrapped in a blanket, with a leather hat on his head, staring out to sea.
"Am I disturbing you?" I asked.
"Of course not," he said. "Come and sit with me. Share your thoughts."
I told him that we had been given an ultimatum.
"Should we leave for Crete?" I asked.
"Yes," he said. "It's time."
We discussed the water situation.
I said that I thought Barcelona-Anna would leave *Pizzazz* in port so that anyone who wanted to stay on the island could still make water. Then the two Annas, George, his daughter Maria, and anyone else who wanted to leave with us would sail south to Crete on my boat.
I said I had talked to Yannis and Yasmine, and Aziz and Fatma, and they intended to hide out in a cave on the island with some of the others. They had no intention of being evacuated. They said that they would rather starve to death on the island, if need be.
At that point we heard screaming from in the road. We went downstairs to find George's old mother in near hysterics. She said that we must come to the church quickly. It was something to do with Father Chryssavgis.
When we arrived at the church there was quite a crowd. They were mostly old women in black who were in a state of pandemonium. George was ushered into the sacristy and I followed with his mother and father. There we found the lifeless body of Father Chryssavgis hanging by a cord from a ceiling truss. He had evidently made a noose from his cincture and stepped off a stool to commit suicide. His tongue was protruding from his mouth and his face was blue and hideously engorged. There was blood running down from his half-open eyes where his capillaries had burst. There was no need to check his vital signs. He was already going cold.
George picked up a suicide note from him and asked his mother to read it to him. She read it falteringly in Greek. As she read, her hands began to shake. I heard her read the names "Antonis" and "Theo". She let out a little anguished groan and crossed herself. George took the letter from her and, clearly brimming with anger, asked everyone to leave the room. I was about to leave too, but he called me back in and shut the heavy wooden door.
"It was him that reported Theo and Antonis to the police," George said.
I simply nodded. It finally all made sense.
Then George walked up to the corpse and spat in the priest's grotesque face.

I watched, transfixed, as George suddenly lost control and started flailing and punching at the body like it was a punch bag. He was yelling in English, "There is no God! There is no God! You are all liars!"
The body was cavorting and twisting under his blows and then suddenly the cord snapped and it fell to the floor like a sack of potatoes. George kicked it twice and a tiny black trickle started to ooze from the mouth and down the beard.
Still seething with anger, George said to me, "Do you know why I am dyslexic? Do you know why I can't read or write? It's because of this malaka."
George told me that when he was having difficulty in school as a boy his parents sent him to Father Chryssavgis for remedial classes in the afternoons. He said that the priest used those sessions to sexually abuse him. It traumatized him so much that he couldn't read or write any more, because of the memory of those lessons. Whenever he picked up a book or a pen the words got jumbled up in his mind as he relived the guilt and trauma of those afternoons.
"Why didn't you tell your parents?" I asked.
"I did," said George. "But they wouldn't believe me. They beat me and told me I was lying because I didn't want to do schoolwork."
George said that in truth his parents were too scared to go up against the church, because everyone confessed to the priesthood and they knew everyone's secrets. Everyone had something or other to hide, and since they knew all their secrets, the priests knew that no one could afford to cross them. So they abused their power.
Since the Greek Orthodox Church considers suicide as unacceptable under any circumstances, and forbids full burial rites to anyone who takes their own life, we simply buried Father Chryssavgis outside the church grounds the next day without ceremony. A solemn crowd gathered and some people put flowers on his plain casket, but aside from a few short prayers, it was a simple affair.

Cp. 12. Revivification

Sappho, the Archaic Greek poet from Lesbos, famous for her lyric poetry, is supposed to have committed suicide by jumping off Cape Lefkada on neighboring Levkas Island. Although Sappho was lesbian, myth says that she killed herself out of unrequited love for a ferryman called Phaon.

Local folklore on Agios Nikolaos held that Sappho's Leap was actually off a tall cliff on the north of island, rather than on Levkas.

The day after Father Chryssavgis was buried, the old folk in the village, mostly the old widows who habitually wore black, came around asking for any spirits or strong liquor that anyone could spare, saying that they were going to have a picnic up at Sappho's Leap. I was preparing my boat to leave, and servicing the engines, so I didn't give it much thought. But it turned out that they were planning to do the *Dance of Zalongo.*

On the exact same anniversary, December 16, 1803, while dancing and singing, 60 women and their children threw themselves over a cliff at Zalongo rather than give themselves up to the Ottoman troops of Ali Pasha.

In a recreation of the Dance of Zalongo, most of the villagers on Agios Nikolaos climbed the mountain and had a picnic at Sappho's Leap. George's parents were among them.

They drank, danced and made merry, and as the afternoon wore on, they began to dance themselves off the cliff while holding hands.

There was nothing much we could do. We couldn't even recover the bodies. So we held a memorial service in the church with the few remaining people in the village.

Over the next week we waited on the weather for a favorable wind to take us south and just carried on loading the boat and transferring valuables and equipment from *Pizzazz*.

The water was so high that we had to use the dinghy to ferry things from shore.

Finally the weather was forecast to be favorable on the day before Christmas and a fresh breeze from the northwest was predicted for the next few days.

When our departure day came, I walked down to the little cove on the way to the *Nikos Beach Bar* to see where our tidemark was. I was astonished to see that the beach had gone. I could see the line we had made was well underwater already, which made the hair on the back of my neck stand up.

I wasn't too sure what to do about the US Navy destroyer in the strait. There was no way we could sneak out undetected, so I thought we would just have to take our chances by just brazenly sailing out past it and hope we were not stopped.

Just before we were about to leave, George pulled me aside and told me that he had decided to stay.

I asked him why, and he said simply, "I was born here and I want to die here."

But it was more than just that.

"That demon inside us, what did you call it?" asked George.

"The alien cortex," I said.

"Yes," said George. "The alien cortex. I feel I have that demon inside me, and it is strong. If you, Hugh, are some kind of Deucalion, or Noah, then we should not pollute the new world with the old demon that destroyed the last one. I feel it's better to keep him here, and let him die with me."
"I think we all have an alien cortex, you don't have to sacrifice yourself, George," I argued.
"Yes," said George. "But I think it's stronger in some than in others. I think it's not as strong in you as in me. That demon took over this planet and destroyed it. If anyone survives, I hope they will not let that happen again. Hugh, I think you can make a servant out of your alien cortex. We cannot let it become our master ever again."
When George told his daughters about his decision they said they would stay with him. But he insisted they should go. He said he had a good feeling about Crete and thought they might have a future there.
I looked into George's dark eyes and saw they were soft and rheumy now. I could see that he was as spent as a man who had lost everything could possibly be.
"What do you call Agios Nikolaos in English?" asked George.
"St. Nicholas," I replied.
"No, no!" exclaimed George, "It's Santa Claus! This is Santa's other island. Not the one at the North Pole – but at the other pole. This is the northern pole of the Earth-flip, remember?"
Then he laughed.
"Opa! I almost forgot. It's almost Christmas, and I have gifts for you all. Let me fetch them for you."
George came back pulling a cart full of goodies. He gave us a crate of wine, a dozen bottles of ouzo and metaxa, huge jars of olives, dried preserves, bags of dried lentils, camping gas for cooking, *loukoumi* (Turkish delight) and chocolates!
Then he handed over three old Enfield rifles and a Mauser semi-automatic pistol – all highly illegal. He gave us enough ammunition to mount a small siege. There were three lamps with spare lamp oil and wicks. He gave his daughters heirlooms and jewelry from their mother and family photos. Then he overwhelmed me by taking me to one side to give me a silver cigar box. It was filled with 1 Oz. gold coins.
"You're a saint, George. An absolute saint!" I gushed.
I'm still not totally sure if George had been surreptitiously hoarding all this loot while we were starving. He claimed that it all came from a secret stash of old Father Chryssavgis, which George had known about since he was a boy. But I'm not really sure if I believe him.
In the late afternoon, when we were ready to depart, Yannis, Yasmine, Aziz and Fatma brought us two crates with a dozen live chickens and a rooster. They gave us a bag of wild grass seeds to feed them, and a sack of dried sausage made from goat meat. An old fisherman gave us rods, tackle and a box of lures and fishing gear.
I couldn't help notice that Yasmine was emaciated, but her belly was distended. I wondered if she was pregnant. It was either that or swelling from Kwashiorkor. I didn't dare ask, but I shuddered at the thought of either.
When we were ready to go the girls hugged their father one last time, weeping profusely.

I shook George's hand solemnly and said, "No Gods; No Masters; No Alien Cortexes."
Then we embraced.
George said, "Minerva only ever lets her owl fly at dusk, when it's too late to save anyone before the darkness of night."
Minerva's Owl is wisdom, of course.
There was a crowd of about a dozen people to see us off, but they had all elected to stay rather than come with us. In the end, it was just the two Annas, George's daughter Maria, and me, that pushed off in the dinghy and boarded my boat.
It was highly emotional and we were all fighting back the tears.
The sun was just dipping over the top of the island as we cast off and took up the anchor. The tanks were still full of diesel for the engines, so we could motor out of the harbor.
As we left the breakwater and looked back at the village it looked almost as deserted as the ruins at Ormos Aetolofos. It was flooded and forlorn – a mere shell of the place that it was when I first arrived. But the green pine glades were still lush and resplendent and birds were still wheeling about the island's peaks.
On a whim, I went and fetched a Jolly Roger I had in a locker and replaced our stern ensign with it. Like that we hoisted sails in a light breeze and sailed brazenly past the US Navy destroyer. It was a tense moment, but I was relieved to see that the watch on the bridge was keeping an eye on us with binoculars without apparently reacting.
When I was sure we had passed the danger point and the destroyer was behind us, I gave the officer of the watch a big smile and a cheeky salute. "Merry Christmas!" I shouted, knowing we were probably too far away to hear.
There was no response.
"Should we moon them?" asked Barcelona-Anna.
"Better not push our luck," I cautioned.
As we left Agios Nikolaos behind, a pod of about a dozen dolphins popped up suddenly around the boat. We whooped with joy as they frolicked between the twin hulls.
"Maybe this means the fish stocks are coming back!" I exclaimed delightedly.
We rushed to the forward pulpits and tried to reach out and touch the dolphins as they teased us around the bow.
When they were gone we poured drinks, put on the autopilot, and went and lay on the trampoline between the hulls. We cranked up the music and watched as the sun set off to starboard. As it sank towards the horizon we toasted it, saying, "May you rise again soon in the west!"
Then, as we got more tipsy, we improvised some synchronous dance moves and the four of us began dancing in unison on the deck. "Should we film us and post it to TikTok?" said Maria.
"Who the hell for?" we laughed.
The GPS system, the Internet, and the cellular network still seem to be surprising resilient. I don't know if we will be able to pick up a signal on the way to Crete. But if we do, I intend to upload this book to the Internet. Obviously, if you are reading it then I was successful.
If not, well, I guess the point is moot.

Anyway, I'll be giving a lot of thought to how this could have all turned out differently. And I hope you will too.
Good luck!

About the Author

Lord Hugh's full name is Lord Hugh R. Adumbass (pronounced "doom bar"). He is the founder of the Argyle R. Sirius Institute, which was previously dedicated to saving humanity from itself – though now it's probably too late. You can find the Sirius Institute at http://sirius.institute/.
Lord Hugh also has a YouTube channel called "Escape with Lord Hugh R. Adumbass" at https://www.youtube.com/playlist?list=PLr_dGr-IFQm4Shawf4cL6tMzTSz9AXHiz.
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